# The Croonian Lectures

ON THE

# PROGRESS OF DISCOVERY RELATING TO THE ORIGIN AND NATURE OF INFECTIOUS DISEASES.

*Delivered at the Royal College of Physicians, London,*

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## LECTURE II.

IN the discussion of the etiology of inflammation in the last lecture, I understood the word "inflammation" to be the name for the changes which occur in a living tissue in consequence of an injury. These changes collectively may be correctly called "inflammatory reaction." They consist in the Hunterian "determination of blood," and the consequences which for the last quarter of a century we have associated with active congestion—namely, exudation of liquor sanguinis and emigration of colourless corpuscles. With reference to the whole process I wish it to be understood that I adhere in every particular to the view given of it in my lectures of 1882, and, in particular, that the word "inflammation" is still to be understood as meaning a process characterised by the formation of pus, and having its seat in the capillaries.

As regards the cause of inflammation, the general result of the study we made of the subject a week ago was that, in all those instances in which suppuration occurs, if one may so express oneself, under ordinary conditions, the efficient cause of the morbid process is always a morbific microphyte, it being understood that there are several species of microphytes which can more or less replace each other as pus-producing agents. We took the yellow cluster-coccus as the most characteristic representative of the class, and one of the most active. Up to the time which immediately preceded the discovery of these microphytes the principle was accepted in pathology that an inflammation might be produced either by a mechanical, by a chemical, or by a thermal injury—i.e., that it might result from violence, from the action of an irritant, or from exposure to heat or cold. But long before then experiments such as those of Professor Kocher of Bern (referred to in my last lecture), in which he found it possible to subject the most vulnerable tissues, such as the marrow of bone, to mechanical injuries of the most violent kind, provided only that microphytes were excluded, as well as the experience which was year by year accumulating in the practice of aseptic surgery, had made it clear that, at all events, mechanical injuries were incapable of giving rise to suppuration of themselves. But the question whether the proximate cause of an inflammation may be purely chemical was, up to a very recent period, undetermined. The previously accepted belief, according to which suppuration could be produced by any chemical irritant of sufficient intensity, was discredited by the insufficiency of the evidence afforded, that in all the instances investigated microphytes were rigidly excluded, and it was not yet proved that when the strictest precautions are enforced which bacteriology can suggest, certain chemical agents are still capable of producing suppuration. Consequently the dictum commonly attributed to Weigert, "no suppuration without bacteria," became generally accepted. My aim must be just now to restore the old doctrine in so far as to show that, leaving out of consideration those wholly exceptional instances in which inflammation is produced by exposure to heat and cold (and which have not yet been investigated in their relation to microphytic influence), the proximate cause of inflammation is always chemical. To justify this proposition I must show, first, that inflammation—that is, suppuration—can be produced by chemical agents in the absence of microphytes; and secondly, that when it is produced by microphytes the action is chemical.

For the establishment of the second point I shall have to refer to a series of observations extending over about eight years, made by a number of highly competent bacteriologists. The methods of experiment by which the proof has been finally attained are various, but of them all the essential feature is to introduce sterilised irritant liquids either subcutaneously or into serous cavities, using precautions to preclude the entrance with them of microphytes. The earliest of these experiments were made in 1881, but it was not until after that time that the perfect means of sterilisation and the improved technique of infection experiments which Dr. Koch had created had come into general use. One of the first of the more exact investigations of the subject which this technical advance rendered possible was that of Dr. Councilman[1], at the suggestion, I believe, of the late Professor Cohnheim. It consists, first, in charging capillary tubes with the liquid to be experimented on, closing the ends hermetically, and then, after sterilising the tube and its contents, introducing it under the skin and closing the wound antiseptically. After it has remained for several days it is broken between the fingers so as to discharge its contents subcutaneously. This method is not open to any objection as regards risk of contamination, provided that it is properly carried out. It may, however, be alleged that, inasmuch as even a glass tube becomes encapsulated—that is, becomes surrounded by cicatricial tissue which is known to be relatively liable to inflammation—the experiment does not afford a true criterion of the susceptibility of perfectly normal tissue to the chemical agent which it is desired to test.

This consideration led Dr. Scheuerlen[2], who worked at the subject later, to improve on the Cohnheim method by substituting fusiform for cylindrical tubes, and to introduce the tube under the skin, say over the sacrum, to shove it up to the neck, and let it rest; then, having ascertained that it produces no disturbance, move it to a new position, and at once break both points. By this method the contained liquid very slowly finds its way into the subcutaneous tissue. Similar tubes may be used for introducing liquids into the peritoneum, in which case it is desirable to attach them to the wound by a long, sterilised silk thread. In all cases the skin must be washed with alcohol and disinfected with 1 per cent. corrosive, and then covered with a layer of collodion. The chemical substances experimented on, either by this or by other methods, have been extremely various. I can refer only to the most important, such as, among inorganic substances, mercury, nitrate of silver, and ammonia; among organic, turpentine and croton. Mercury produces suppuration in the dog, not in the rabbit. In the former, if it is injected hypodermically, each drop becomes the centre of a minute abscess. Silver nitrate in 5 per cent. solution produces suppuration in the dog with great certainty, but not in rodents. Ammonia fails to produce pus in any animal. It is either absorbed or kills the tissue with which it comes into relation. Of organic substances, the body which has been most experimented on is turpentine. In the carnivora, indeed, it produces abscess with great certainty. The organic action of croton is similar, but inferior. In all these experiments it must be understood not only that the materials used are sterilised, and that they are introduced with the most rigid antiseptic precautions, but that the pus obtained or produced is tested by cultivation, and that dry cover-glass preparations are subjected to microscopical scrutiny. In every instance, provided that the experiment has been properly performed, the inflammatory exudation liquid is sterile[3]. The conclusion to be derived from these facts scarcely needs stating. It is not true, as we once inclined to think possible, that suppuration can only be brought about with the concurrence of microphytes. On the other hand, the experiments show that the readiness with which pus is formed depends on conditions which belong to the animal rather than to the noxa. In the dog a sterile abscess can be produced with ease with such different agents as mercury and turpentine, but it is much more difficult to obtain this result in a rodent.

The other point I have undertaken to prove is equally important. It is not only true that inflammation can be produced without the coöperation of microphytes, but that, when these organisms are directly concerned in its production, their mode of action and its proximate cause are still

[1] Councilman: Zur Aetiologie der Eiterung. (Virchow's Archiv, vol. xcii.)
[2] Scheuerlen: Weitere Untersuchungen ueber die Entstehung der Eiterung. (Langenbeck's Archiv, vol. xxxvi.)
[3] J. Steinhaus: Die Aetiologie der Acuten Eiterung, pp. 152-170. Leipzig, 1889.

chemical. We have already seen that the two effects which the cluster-coccus exercises on its surroundings are, first, destruction of the vitality of the elements which come immediately within its influence, and, secondly, the evoking of exudation and emigration of leucocytes from the capillary of bloodvessels in the neighbourhood—effects which can only be explained on the supposition that these microphytes, so long as they continue to vegetate and multiply, give off products which are sufficiently diffusible to impregnate the tissue, but not sufficiently so to be easily absorbed. The experimental proof that this is so lies in the observation that not only in the case of staphylococcus, but in that of many other micrococci, the symptoms which result from the presence of the microphytes themselves in the living organism can also be produced by the soluble chemical products of their vegetation. So long ago as 1878 M. Pasteur[4] showed that cultures of the "microbe générateur du pus" which had been sterilised were as capable of producing abscess as living cultures, and that the resulting pus was sterile; but it was not until a few years ago (1887) that Grawitz[5] made similar experiments with pure cultures of pyogenic microphytes, particularly with the ordinary staphylococcus. Since then various other experimenters have investigated the subject in relation to this and other pus-producing microphytes, with the general result that in carnivora sterile abscesses can be produced with the same certainty by the injection or introduction of devitalised cultures of staphylococcus, as by turpentine or mercury. In rabbits, when a Cohnheim's tube, charged with such sterilised cultivation, is used, the same phenomenon presents itself as if the tube contained croton—leucocytes creep in at the end.

PART II. "*Chimiotaxis*" *of Leucocytes*.—It is thus apparent that local inflammatory reaction is always dependent on the chemical action of the noxa. Now, in this reaction there is one factor more prominent than any other—that is, the colourless corpuscle or leucocyte. When you introduce a capillary tube containing a bubble of mercury underneath the skin of a rabbit and break the ends, almost the only sign of reaction is that leucocytes creep in at the ends as if to explore or find out what is in the tube. The behaviour of leucocytes in this and other similar cases has for the last twenty-five years attracted the attention of pathologists, and has repeatedly suggested the idea that the movements of these "wandering cells" are guided by something like *discrimination*. Of late the theory that leucocytes are endowed with special powers for the protection of the organism against the invasion of contagious microphytes, and that they first swallow and then digest them, has been so energetically advanced by its author, and supported by arguments and seeming proofs of so convincing a character, that it has exercised a very marked influence. This theory well deserves our attention, both for this reason and in consideration of its scientific importance. But before we enter on the examination of the experiments on which it is founded, I am desirous to draw your attention to another aspect in which the part which leucocytes play in the process of inflammation and their function as phagocytes may be considered. It was several years ago observed by the distinguished plant physiologist, Professor Pfeffer, with reference to a variety of motile unicellular structures, that the power which they enjoy of locomotion in water, and particularly their power of apparently guiding their own movements, may be accounted for on the principle that in executing them they are allured towards any substance in the media in which they live, provided that it is not too remote; and that the attracting object contains some soluble constituent which is, so to speak, *agreeable* to the attracted organism with which its immediate neighbourhood is impregnated. To this attraction, which seems to imply the existence in the simplest organisms of a rudimentary sense of taste, Pfeffer has given the name "chimiotaxis," denoting thereby that, however incomprehensible the movement may be, there is yet a definite relation between it and the chemical substance by which it is enticed—or, putting it otherwise, between the *vital movement* and the *chemical action* which determines it.

Now, as regards leucocytes, we have long—I might even say all along—recognised that although their power of amœboid movement may explain their power of incorporating objects with which they come into contact, and may even help us to understand their ability to squeeze themselves through very narrow openings in the walls of the bloodvessels, it did not serve to account for their tendency to emigrate. In describing the phenomenon for the first time in 1870, I admitted myself wholly unable to state why "in an inflamed part leucocytes should separate from the blood and tend towards the internal surface of the veins and capillaries." Metchnikoff, writing in 1883, makes this a reason for regarding Cohnheim's doctrine of inflammation as unsatisfactory. A few years ago it was suggested by Dr. Leber that the migration of leucocytes might be regarded in the same light as the migration of anthero zoids and zoospores had been regarded by Pfeffer—i.e., that the escapes of the colourless corpuscles might be due to the existence in the tissues of chemical substances attractive to them. The suggestion has since led to a number of experimental investigations, of which those of Buchner in Germany and of Massart and Bordet in Belgium are perhaps the most important. The method employed is similar to that which I have just described in its application to the determination of the phlogogenic properties of various chemical substance. In its simplest form it consists in charging a capillary tube with the liquid of which the "chimiotactic" properly is to be tested, choosing one end and then introducing it into the lymphatic cavity of a frog, the result being that if the material is chimiotactic leucocytes swarm round the open end of the tube and crowd into the liquid it contains. It might, however, be objected that these phenomena are merely the indications of a process of inflammation, consequent on the presence of a foreign body in the lymph salt. It is, however, easy to give such a form to the experiment as to exclude this interpretation. The plan which I have myself adopted is to seal two capillaries together and to charge the one with the liquid to be tested—as, e.g., with sterilised culture of *staphylococcus*,—the other with an indifferent fluid, such as the fresh bile of the frog. The contrast between the one and the other affords the required evidence that in "going for' bacterial product they are actuated by their own free choice. But in admitting this we must guard against the supposition that in the exercise of this choice the leucocytes are actuated by a "protective" motive, for Buchner has conclusively shown that although the constituents of certain microphytes are specially attractive to them, they are scarcely less partial to products of similar nature derived from the tissues of the higher plants. The facts of chimiotaxis may serve to explain, however, that leucocytes, like vultures, gather together "wheresoever the carcase is," but they do not afford any support to the theory of Metchnikoff that they are actuated by an almost conscious discrimination of what is advantageous to the *organism as a whole* from what is detrimental. In the examination of that theory, which I propose to begin to-day, we shall see that while we are now able to understand better than was before possible that, as Sir John Simon taught thirty years ago, there is an antagonism between inflammation and contagion, between leucocytes and viruses of all kinds, there is no reason for attributing this to the maintenance of a mysterious relation between the leucocyte and the organism with which it is no longer in structural continuity.

Metchnikoff's theory was first developed in 1884. It was founded on a theoretical conception derived from the science of morphology—viz., that the familiar process by which a leucocyte takes into its own body any small solid particle which happens to be suspended in the liquid medium in which it lives, is an attribute which it derives by inheritance from the remote progenitors of the animal of whose body it forms a part[6]—i.e., eventually from amœba, and less remotely from cœlenterates, the mesodermal cells of which enjoy this faculty of incorporation in a high degree. That in these animals intracellular incorporation performs an important part in digestion and in the absorption of effete structures there is no reason to doubt, nor is there any doubt that not only leucocytes, but other fixed cells of mesodermal origin, exist in the

[4] L. Pasteur: De l'Extension de la Théorie à l'Étiologie de quelques Maladies Communes. (Bulletins de l'Acad. de Méd., Nov. 4th, 1880, p. 435.)

[5] Grawitz u. de Bary: Ueber die Ursachen der Subcutanen Entzundung u. Eiterung. (Virch. Arch., vol. cviii., p. 67.)

[6] Metchnikoff: Untersuchungen ueber die intercelluläre Verdauung bei wirbellosen Thieren. (Art. aus dem Zool. Institut zu Wien, vol. v., p. 141.

bodies of vertebrates, and are capable of incorporating. The fact has been familiar to every student of medicine for twenty years, and known to physiologists much longer; but it remained for a morphologist to point out to us that we saw, but perceived not, that the intracellular incorporation is in reality a "protective mechanism," and that the cells which exercise this function are endowed with the power of distinguishing between what is advantageous and what is pernicious, but of appreciating all the fine distinctions of ills to which flesh is heir. All such cells Metchnikoff calls phagocytes, and speaks of them as of two kinds, microphages and macrophages, words which it is to be hoped will not find their way into the English dictionary. Under the former term he includes what, for the last twenty years we have commonly called leucocytes. Under the second a variety of histological elements, most of them old friends, among which are included the connective tissue corpuscles, the large pulp cells of the spleen, and the large cells with vesicular nuclei which, in the mammalian liver, surround the capillaries—all of these have single nuclei,—and finally the so-called epithelioid and giant cells of tubercle. The introduction into Metchnikoff's theory of elements of such different kinds is a complication. As, however, the colourless corpuscles of the blood take chief part in the process of inflammation, it is a token that the prophylaxis of the body against the invasion of microphytes is chiefly assigned.

It cannot, I think, be doubted that one reason why this theory has attracted so much attention is that its author, himself a morphologist, has clothed it in the language of a science which is now in vogue. When the human or animal body is invaded by a morbific microphyte, he imagines a "struggle for existence" to occur between phagocyte and microbe. In this struggle it adapts itself to its *environment*. According to Metchnikoff, this adaptation is not only acquired by those leucocytes which have actually taken part in the fray, but is handed down to their posterity, and so their supposed protective function is explained. The diagram serves to illustrate the way in which, in a well-known crustacean, the corpuscles of the circulating fluid crowd round and seize upon the spores of a parasitic plant which in this animal is the cause of an infective disease. The transparency of the tissues renders it possible to watch the process by which the leucocytes exercise their protective function. The paper from which this drawing is taken was published in 1884, and the observations contained in it were the starting-point of Metchnikoff's pathological studies. One of the earliest subjects of observation was erysipelas, a disease well adapted to his purpose as one of which the microphyte origin had been very definitely ascertained. But before I give an account of these researches I must remind you of one or two preliminary facts relating to the pathological anatomy of erysipelas. Twenty years ago we knew from the researches of Volkmann and Steudener that in skin which is being invaded by the spreading inflammation the change consists in intense vascular injection of the superficial layer of the corium and corpuscular infiltration of the cellular tissue, following the course of the blood-vessels and interfascicular spaces; and that the raised border which one feels with the finger in passing over the line of extension from the healthy to the inflamed area was due to exudation of liquid containing leucocytes, which in process of time were disintegrated and absorbed; but it was evident that "changes must take place of the skin antecedent to the corpuscular infiltration,"[7] and that if such changes existed "they would be found, not in the inflamed skin, but in the skin about to be inflamed—not in the swollen line of extension, but beyond it." Guided by this consideration, Lukomsky, a young pathologist who worked under Professor von Recklinghausen, was able to show by such methods as we then had at our disposal that the first stage in the erysipelatous process is not either exudation or emigration, but the choking of the lymphatic channels of the corium with micrococci. As to the nature of these micrococci, all that we then knew was that they were in chaplets, not in clusters. I had the opportunity of observing this in several cases at St. Thomas's Hospital, and particularly in one in which it was perfectly easy to obtain exudation liquid containing chains by tapping with a perforated needle the very edge of the spreading redness. Here, then, was a case eminently suited for illustrating the antagonism between leucocytes and microphytes. What are the details of the contest? Koch and Fehleisen both were able to show that in a spreading erysipelas cocci are to be found only at or rather beyond the visible edge of extension, where the skin is apparently as yet unchanged; and that at the swollen edge, where the vessels of the papillary layer begin to be injected, and leucocytes abound in the lymphatic spaces, the cocci are less abundant, and those that there are can no longer be stained. That they disappear, and that their disappearance is coincident with the appearance on the scene of innumerable emigrants, is not disputed; but how this happens is open to question. Let us hear what Metchnikoff says. What he observed was—first,[8] that wherever the process goes on normally many leucocytes are charged with streptococcus, although there were also many free from them; but that in parts which were "going wrong" incorporation was almost absent, and that the reason why the struggle for existence between leucocyte and microphyte terminated in favour of the latter was, to put it plainly, that there was not enough inflammation. Throughout, according to this view, the want of reaction is the sign, if not the source, of danger. The unfavourable condition in a wound which makes it likely to be the starting-point of an erysipelatous inflammation is that it is not suppurating freely, and the unfavourable condition in an erysipelas already begun is that there is not enough corpuscular infiltration. We have therefore here unquestionable antagonism between inflammatory reaction—that is, abundant exudation and emigration—and the manifestation of infective virulence, nor can it be questioned that the facts afford evidence of the beneficial influence of intra-cellular incorporation, in so far as they show that in general the issue is most favourable when the process is most active, and that we have in them a fresh proof of the power which the living body possesses of defending itself against the invasion of disease-producing microphytes. What they do not show is that this function is dependent on incorporation by leucocytes. All disease-producing microphytes die, some rapidly, others more gradually, when they are surrounded by living tissues of man or the higher animals. *All are sentenced to death. The question is, Is death always preceded by imprisonment?* This is a question which cannot be determined by merely watching processes from outside. It can only be determined by experimental methods, in the application of which no one has shown more resource and ingenuity than Metchnikoff himself. Let me now shortly describe to you some of the proof on which he chiefly relies.

There are three ways in which the question can be approached:—viz., (1) By ascertaining in what way the multiplication of microphytes within the animal body is affected by the intervention or exclusion of leucocytes; (2) by the direct observation of the changes which incorporated leucocytes undergo when watched under the microscope; and (3) by comparing susceptible with insusceptible animals as regards the way in which they deal with morbific microphytes when introduced into their bodies, it being understood that as regards the last question a distinction must be made between animals in which insusceptibility is acquired with those in which it is congenital or, as more often expressed, natural. One of Metchnikoff's experiments consists in introducing under the skin of an insusceptible animal, the frog, a bit of liver or spleen of a rabbit affected with splenic fever. The bit, when examined a couple of days later, is coated with gelatinous exudation, full of leucocytes. These leucocytes were charged with bacilli, in various stages of degeneration.[9] If the experiment is done at the ordinary temperature, the frog is none the worse for the injection; but if it is exposed at the time and subsequently to a temperature of 38°, the leucocytes, paralysed by so high a temperature, fail in their office, the bacilli get the better, and the frog inevitably dies. A much more exact experiment of the same kind consists in introducing under the skin of the same animal a membranous tube made of the lining of the common large grass which grows on the banks of rivers (Phragmites), containing spores of bacillus anthracis. Soon

[7] Metchnikoff: Ueber eine Sprosspilzkrankheit der Daphnien (Virch. Arch., vol. xcvii.). See the author's papers on Erysipelas, in "Recent Researches on the Pathology of the Infective Processes," in Reports of the Med. Officer of the Privy Council, &c., N.S., iii., 1874, p. 19.

[8] Metchnikoff Ueber den Kampf der Zellen gegen die Erysipelkokken. (Virch. Arch., cvii., p. 209.)

[9] Sur la Lutte de l'Organisme contre l'Invasion des Microbes. (Ann. de l'Inst. Pasteur, vol. i. p. 325, 1887.)

the little tube fills with lymph, but contains no leucocytes, for to them the membrane is impermeable. A similar experiment is made at the same time with another tube, of which the ends were left open, so that the leucocytes could enter. In a day or two both tubes were examined. The contents of the closed tube swarm with virulent bacilli. In the open tube the spores have been so effectually disposed of by the leucocytes that the contents could be inoculated to susceptible animals without effect. The proof by direct observation that a leucocyte may contain living bacilli, or, in other words, that incorporated bacilli are not necessarily defunct at the time of their incorporation, either as regards viability or virulence, is obtained by a most ingenious method which I must describe. A "hanging preparation" of exudation, containing incorporated bacilli, is examined on the warm stage.[10] This done, a drop of nutritive bouillon previously placed on the under surface of the cover-glass close to the drop of exudation is brought into confluence with it. The addition of the bouillon to the exudation kills the cell, but affords to the bacilli the required nutriment. In the course of an hour, during which the cell was watched under the microscope, the bacilli, by lengthening into filaments, had given unequivocal evidence that they were alive. But it might still be questioned whether they retained their virulence. This Dr. Metchnikoff settled by performing an extraordinary feat in microscopical manipulation. A cell which had been so observed was dexterously transported from the drop to another drop, in which it grew to a felt-work of fibres, and this was removed, eight hours after, into a flask of bouillon. Next morning this culture, the product of the bacilli contained in a single leucocyte, was used to infect a group of animals—to wit, a mouse, a guinea-pig, and two rabbits.

So much for direct observation. I think we must admit that it is possible for live bacilli to be incorporated. Let me now describe to you Metchnikoff's method for comparing the process of incorporation in a susceptible animal with that observed when susceptibility has been annulled or diminished by previous infection. In the next lecture I hope to discuss the various methods by which the state of insusceptibility can be acquired, in their bearing on the etiology of specific infections; for the present we will assume that these methods exist, and can be relied on. Among these diseases is the well-known disease of pigs known as rouget, insusceptibility to which is acquired by inoculation with mitigated cultivations, in the same way as in the case of anthrax. Rabbits, of which the "immunity," as it is called, had been tested by inoculation with virulent material, and found to be infection-proof, were used by Metchnikoff for the purpose of comparison with normal rabbits, as regards the behaviour of their leucocytes. The method used consisted in introducing under the skin a contrivance familiar to all pathological students as a Ziegler's chamber,[11] but differing from it in being made up of four cover-glasses arranged in pile and cemented together at their edges, so as to leave the intervening spaces accessible. If this system of plates has been dipped in a virulent culture of rouget, the spaces between the cover-slips are found, when removed for examination two hours and a half after insertion, to be crowded with leucocytes, in which a very considerable number of bacilli are incorporated, whether the rabbit has been protected by inoculation or not. But subsequently, says Metchnikoff, the difference between the behaviour of the leucocytes in the two cases becomes more and more marked; so that, for example, two days after insertion the leucocytes in the trap taken from the unprotected rabbit contain normal bacilli, whereas those yielded by the protected rabbit are all in a state of degeneration. He admits that there were also degenerated bacilli which were not incorporated, but thinks that these had probably escaped from leucocytes destroyed in preparation. Similarly, Metchnikoff finds that in animals naturally insusceptible, the immunity is due to the endowments of their leucocytes. Thus, in the white rat, to which anthrax can be communicated with great difficulty, the introduction of active virus gives rise to a local inflammatory reaction, whereas in other rats it fails to do so. On "phagocytic" principles, inflammatory reaction is prophylactic. It is the colourless corpuscles of the blood, therefore, which, by virtue of the part they take in ordinary inflammatory reaction, form the first line of defence against the invasion of microbes. If this is broken through, a second line—admitted by Metchnikoff to be in general an ineffectual one—is constituted by the tissue cells of the liver and spleen.

Such are some of the most important and convincing proofs which Metchnikoff offers in support of his theory. As the theory itself has been received, on the whole, with little favour by pathologists, it is more necessary to refer to the arguments of the few writers who have given it a more or less qualified assent. In my last lecture I referred to the work done by one professed adherent of the doctrine of phagocytosis, Dr. Hess.[12] But Hess scarcely went more than half way with Metchnikoff. He anticipated him in the use of glass chambers introduced under the skin as a means of comparing the local reaction which is occasioned by the introduction of bacillus anthracis in a susceptible animal, such as the rabbit, with that which is to be observed in an insusceptible (the dog). He found that whereas there was scarcely suppurative reaction in the rabbit, the virulent material which had been introduced was invested by a zone of leucocytes, in which many bacilli were incorporated. As these were surrounded by an outer zone of leucocytes free from bacilli, the focus of infection was secluded and effectually protected from the influence of the surrounding tissue. Again, when he observed that the bacilli of splenic fever introduced into the circulating blood of the frog were incorporated by the colourless corpuscles, that after several days they disappeared, and were then to be found in the spleen, the advantage or use of this incorporation seemed to be little more than mechanical.

In France one of the strongest and most influential supporters of the doctrine of phagocytosis is Prof. Bouchard;[13] but he, like Hess, is eclectic, and chiefly emphasises the fact that the existence of inflammatory reaction—i.e., exudation and emigration of leucocytes at the seat of infection—is a condition unfavourable to its spread. In the very admirable exposition of the subject which he gave in the general sitting of the Berlin Congress, he took the process of inflammation as his point of departure, defining it, in accordance with the definition which I submitted to you ten years ago, as the reaction of living tissue to injury, that reaction consisting in the accumulation of mesodermic cells, "*qui affluent vers le foyer du mal et le circonscrivent*," and further on he designates this as a "pathological act provoked by a local irritation of the part." Admitting, as Hess does, that virulent microphytes, when introduced into the circulating blood of *non*-susceptible animals, are incorporated by the colourless corpuscles, M. Bouchard agrees with Metchnikoff in thinking that they may be devitalised or attenuated; but this he attributes, not to the mechanical action of incorporation, but to an "*état microbicide*" or "*bactericide*" which they participate with the fluids and solids of the living body. As to what is meant here by the bactericidal state and how it is brought about, Bouchard has made observations of great importance to which we shall have to recur later. For the moment it is sufficient to indicate that to him, although he is regarded as a champion of Metchnikoffism, the function of leucocytes is merely mechanical; the dissemination of contagious particles is prevented partly by the crowding round them of leucocytes in great numbers, partly by incorporation, but not by virtue of any power of digestion or by any chemical action whatever which is peculiar to amœboid cells. I have referred to Hess and Bouchard, not as opponents, but as supporters of the doctrine of phagocytosis, and we have seen that that support is a very partial and qualified one. I am, indeed, unable to find that any pathologist of repute accepts what, I think, *must* be regarded as M. Metchnikoff's fundamental propositions—namely, (1) that the devitalisation of microphytes is a special and exclusive privilege of phagocytes—understanding by the term both leucocytes and certain connective or epitheloid cells in which incorporation is observed to take place; and (2) that leucocytes are capable of *discriminating* between contagious particles of different kinds, and that they exercise this power of choice *for the good of the organism* of which they form part. The rejection of the first proposition rests on the concurrent testimony of

[10] Metchnikoff: Études sur l'Immunité. (Ann. de l'Inst. Pasteur, vol. iv., p. 65.)
[11] Ibid., vol. iii., p. 289.
[12] Dr. C. Hess: Untersuchungen zur Phagocytenlehre. (Virch. Arch., vol. cix., p. 365.)
[13] See M. Bouchard's Address at the Berlin Congress, in vol. i., p. 49, of the "Verhandlungen."

the best pathological histologists, to the effect that all pathogenous microphytes degenerate somehow—i.e., show signs of structural disintegration—if they remain a sufficient time in relation with living protoplasm, and that this degeneration takes place both in blood or lymph and in tissue; and that, when leucocytes are present, it constantly happens that the unincorporated microphytes show the same signs of disintegration as those which are imprisoned and in the same degree. It further rests on the observation that in general vigorous microphytes—that is, those which are in full vigour—are not incorporated, so that incorporation comes to be in itself a sign not of actual death, but of impaired vitality and diminished virulence. Now both of these are points which can only be decided by direct microscopical observations of an extremely difficult and delicate kind. The best are those which were carried out a year or two ago at Göttingen and Breslau by Dr. Nuttall and Dr. Bitter, under the direction of Professor Flügge.[14] Dr. Bitter observed the process of rapid degeneration of the bacillus anthracis which occurs in "protected" sheep—that is, in animals vaccinated on the large scale, as a protection against splenic fever, by Pasteur's method. Bacilli introduced subcutaneously in properly protected sheep are made short work with by the tissues. There are plenty of leucocytes present. Or, putting it otherwise, the injection gave rise to a localised inflammation. There are also plenty of bacilli, some of which are incorporated, others not, but all degenerate and eventually die. An observation like this, which can be repeated over and over again, is in some respects more convincing than an experiment made in strict accordance with the experimental method in which the conditions of the natural process are imitated, with the exception or exclusion of the one which is in question—the presence of phagocytes. It is, however, desirable to employ both methods—that is, to bring the question at issue within as narrow limits as possible. If, as the observation in gross indicates, microphytes are devitalised not only in cells but in the liquid in which they float, it should be possible to verify this by observing the process in liquids of the same kind which contain no cells. Dr. Nuttall has carried this out most thoroughly by subjecting a variety of non-corpuscular animal liquids, such as humor aqueus, pericardial fluid, serum of blood, with which bacilli were mixed, to microscopic examination in the perfectly fresh state and under normal conditions. As regards temperature, this was effected by placing not merely the object, but the whole microscope, in a chamber of which the temperature was constant to a fraction of a degree (1). The liquid to be experimented on was first placed on the surface of a cover-glass, and then inoculated in the usual way with a platinum loop charged with virulent bacilli. It was then cemented, drop downwards, on to a slide provided with a "well" on its upper surface, so that the cover-glass formed the roof of a closed chamber into which the drop hung. When a drop of blood obtained directly from the circulation is treated in the way I have described, it of course coagulates rapidly, and very soon the disc-shaped coagulum is surrounded by a zone of serum. If the impregnated platinum wire is brought into contact with this zone, so as to introduce a certain number of bacilli, the process of disintegration can be watched. In human blood and in the blood of the insusceptible dog it is extremely rapid, being accomplished in an hour. In that of the susceptible rabbit it requires five hours. If in a similar experiment salt solution is substituted for blood, the introduced bacilli remain unchanged; if bouillon takes the place of the blood, they at once begin to multiply, so that at the end of the hour the drop is crowded with long filaments. The second of these check experiments might suggest that the bacilli die for want of available nutriment, but the preceding one shows that the influence of fresh serum on microphytes is toxic, not atrophic.

Another form of experiment devised by Dr. Nuttall is equally conclusive, and the more striking that it is so simple. Lymph can be easily obtained from the frog by introducing a small fragment of sterilised cotton-wool under the skin. It soon becomes soaked with lymphatic fluid, which can be sucked out of it with the aid of a fine capillary tube and transferred to the cell, inoculated with anthrax culture and observed as a hanging drop. The value and interest of this experiment consist in the opportunity it affords of observing incorporated and unincorporated bacilli side by side; for frog lymph, collected in the way I have mentioned, contains leucocytes which, at a temperature of 18° or 20°, display amœboid movements, but not in sufficient numbers to interfere with observation. The result of the observation is that all bacilli, whether enclosed or free, undergo the same sort of change. They first become granular, and then so pale that they can scarcely be made out without staining.

I must now ask your attention to another point investigated by Dr. Nuttall—that, namely, of the inverse relation between *intensity* of *local reaction* and *liability* to *constitutional infection*. We have already seen that if you introduce a clean bit of capillary tube under the skin, it remains quiescent, and that this simple experiment affords the basis of a very exact method of testing the pyogenic properties of chemical irritants. If the tube is charged with a culture capable of producing local reaction, its presence is sooner or later resented in the same way as it would be if it contained croton or mercury. Under these circumstances the degree and character of the effect affords a convenient and very reliable criterion of the existence of such a relation between the contents of the tube and the tissues of the animal experimented on, that the contact of the one with the other produces inflammatory reaction. Now, what the experiment shows is that in the same animal in which a mitigated virus festers, but produces no ulterior consequences, an unmitigated one produces no observable reaction, but eventually kills the subject of experiment. Metchnikoff's explanation is the teleological one—one which you have had so often before you—that it is for the good of the organism. But if the purpose of festering is, as he maintains, defensive, why does it happen when there is no danger, and fail when to fail is fatal? It is, I think, much more probable that local reaction and liability to infection are linked together, not by causal relations to each other, but as products of the same antecedent conditions—i.e., that the reason why a virus of great intensity does not produce suppuration is *that it is intense;* in other words, that the same agent which in smaller concentrations excites exudation and emigration paralyses these processes when in greater intensity. If it is true that a physiological link such as I have indicated exists between the tendency to local reaction and proneness to infection, we should expect that any cause or agent capable of paralysing local reaction—that is, of inhibiting the inflammatory process—would, so long as it operated, aggravate the intensity and promote the spread in the infected organism of a contagium. Guided by considerations which, although otherwise expressed, are in substance the same as those which I have now submitted to you, M. Bouchard and his able collaborateurs in Paris have thrown much light on this difficult subject. The purpose of their investigations has been, first, to ascertain whether agents of the kind suggested exist, and, secondly, whether they possess the aggravating power assigned to them—using the word "aggravating" as opposed to "attenuating"—whether, in short, under their influence a *mitigated* virus acts as if it were *virulent*, or the immunity of an individual is diminished or annulled. Do agents exist by which inflammatory action can be arrested at will? To obtain an answer to this question we must go back with M. Bouchard to the starting-point of their inquiry. Among the most interesting of the specific pathogenic microphytes which have been worked out during the last few years is the bacillus pyocyaneus, the bacillus of blue pus. This organism is in the first place remarkable as the source of the colour from which it derives its name, which it communicates readily to any of the cultivating media in which it grows, and yields to chloroform. It is no less remarkable for the definite character of the symptoms which it produces when injected into the circulating blood of a living animal. A few drops of the pure cultivation produce pyrexia, followed by collapse, purging, and death, with, as is seen on dissection, intense enteritis. In addition to this, all that is necessary for us to have before us just now is that the blue-pus bacillus is not only virulent but toxic—that is, that although when introduced in minimal quantity into a vein it kills by multiplication in the organism, after the manner of a contagium, *almost all the symptoms of its action can be produced by the injection of the products of its vegetation outside of the body—i.e., of a sterilised culture.* Now it is this product which M. Charrin found in 1888 to possess the required power of inhibiting the inflammatory process. In the rabbit, as we have seen, cultures of this microphyte,

[14] Flügge: Studien ueber die Abschwächung Virulenter Bacterien. (Zeitsch. f. Hygiene, vol. iv., p. 208.)

when injected *intra venas*, produce rapid death, preceded by fever and collapse. If it is injected subcutaneously, it does the same thing, producing no local symptoms. In the guinea-pig, which is much less susceptible, it produces local inflammation at the seat of puncture, but no signs of general infection; but, says M. Charrin, if the insusceptible guinea-pig is "prepared" by infusion of some of the product of the very same bacillus, it is thereby, so to speak, converted into a rabbit for the nonce—local reaction disappears, constitutional infection takes its place.

What is the meaning of all this? What M. Bouchard says about it is, that the action relates to the inflammatory process as a whole—that is, that it is not a paralysis of amœboid cells, as has been supposed, but an action on the whole machinery of living tissue, on vaso-motor nerves as well as bloodvessels; and accordingly he places the chemical action of microphytic products with the action of such general depressants as cold, exhaustion, or even mere restraint of bodily movement, each of which has been shown to favour infection by diminishing local reaction. For by experiments which appear to me to be of surpassing interest he shows that the same culture which, when introduced under the skin of the relatively insusceptible animal in a Cohnheim's tube, produced general infection without local reaction if the animal were immobilised, produced local reaction—i.e., suppuration without infection—if it were left at liberty. What explanation can be given of all this but one—namely, that in each instance the same cause which weakens local reaction weakens at the same time, and in a similar degree, the power which the organism as a whole possesses of defending itself against infection. In what this power of defence consists I will endeavour to set forth in the next lecture, in so far as present knowledge is adequate. In the meantime let us avoid attaching any other meaning to the unquestionable fact of phagocytosis, excepting first that the emigration of leucocytes is an essential part in the process of inflammation, and that there is an antagonism between this process and the process of general infection. The most important fact that we have learnt to-day is that the living tissues and fluids of the human and animal body possess, in a greater or less degree, the power of arresting the development of certain disease-producing microphytes, and that certain chemical products of microphytic vegetation impair this protective power, and at the same time inhibit local inflammatory reaction.

In my next lecture our inquiry will extend from the consideration of the non-specific noxæ, of which the morbific action chiefly manifests itself in the production of inflammation and fever, to the still more interesting, but also much more difficult, question—How does the organism protect itself against specific infections?

# Address

DELIVERED BEFORE THE

## NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY,

*October 7th, 1891,*

BY T. CLIFFORD ALLBUTT, M.A., M.D., LL.D., F.R.S., &c.

MR. PRESIDENT,—The increase of years in our lives brings with it some soberer joys of its own; were it not so, increasing age would be but increasing sorrow. Of the pathos of age a chief part is the sense of lost opportunities, of duties unfulfilled, of a past, not perhaps wasted, yet bearing the marks of long periods of sterility, of fields ripened to no harvest: of the joys of age, the greatest is to learn that a life so scarred by failures has, nevertheless, yielded some fruit, has cheered and strengthened a few hearts, and has gathered about itself some grace and some kindly memories and affections. An old teacher of medicine looks back almost too clearly upon such a time of unequal performance. He remembers but too well his lectures that were arid, his clinical demonstrations perfunctory, his counsels defective, his inspirations feeble; and he is tempted in his haste, or in his regret, to say that his life has been spent in vain. Then, as to me, when I was called to this place and service by the voice of an old and valued pupil, there comes a message as out of the past to tell him that his labour has not been altogether in vain nor his voice wholly unheard. Forgive me, then, if I answer this call too readily—if it touch me and compel me to occupy you this evening, with little for your reward. At first I thought that, having quitted the field of the practice of medicine, I could not now pretend to instruct or even to entertain you who have passed me in that field; Dr. Cattle, however, took the risk of assuring me that there might be some value in the reflections of one who, having rested from this labour, would by his very aloofness be enabled to form more leisurely and more dispassionate opinions, or to offer more disinterested advice.

As in this spirit I reflect upon medicine as I have seen it, I think I see more and more clearly the nature and form of the surprising changes which have come over our art since my young days, since the days when I (the nephew of four medical men), in turn myself a medical student, came in contact with those practitioners who had taken their traditions from the teachers of the beginning of this century. In this way the direct or indirect experience of one life may seem to be extended to something like a secular period. Whether we look back for three generations or, in our own time, look away to the most ignorant of our fellow-men, we note across this time, or this space, a change which consists in the decay of medicine as magic and the regeneration of medicine as a department of natural history. When, even at the present day, a suffering woman of the least educated class comes to seek from you medicine for the relief of ills bred of overwork, insufficient food and bad habits, she will scorn your advice even in so far as she might be able to act upon it—she will hear it, as she hears the parson's sermon which precedes the dole, simply as an otiose introduction to that which she needs, which is the magical bottle to dispel her pains. That twelve-ounce bottle contains for her the twelve charms which are to conjure her pains as the contents of the silk and silver bag of Adonbec el Hakim conjured the fever of Richard Cœur de Lion.

The poor woman forms no theory of the action of the remedy; she has not attained even to the antidotal point of view, and she, or rather her ancestors, have relinquished the frankly supernatural. Her pains are a mystery, the nasty potion is likewise a mystery, and she trusts that two blacks may make one white. Out of this mental attitude, however, if mental it be, comes, with no difficulty, the antidotal point of view, a view which at first is not unreasonable, and which leads at last to theories of the highest scientific value. In its beginning an antidote is supposed to act by virtue of a property of repulsion. The terrified man, described by George Borrow, who rushed into the inn at Evora, wore rosemary in his hat to scare away the devil or devilish agencies of unknown kinds, believing this herb in some unexplained way to be repulsive to that fiend; a hypothesis in itself not necessarily unscientific in character, but, so far as we know, untrue, or at any rate unverified. The hypothesis, however, becomes unscientific when diseases are regarded as spirits or entities separable from the body, and as such to be expelled by antidotes, as rabbits are expelled from their burrows by ferrets. Yet, surely, it may be said, our knowledge of the action of poisons, and of the expulsion or annulling of these by antidotes, informs us of some such relation. But an error lies here in the identification of the poison with the disease. I need not say that a poison is no more a disease than a cudgel is a broken head; and that the antidote does not cure the broken head, but, by arresting the blow, prevents further damage and permits that which is done to heal. An antidote in this sense is not the cure of a disease, but the remover of its cause. That the reaction takes place in the vessel of the body is an accident, an unfortunate accident, an accident to be avoided; for antidotal medicine belongs to the sphere of preventive, not of curative medicine. The agents called "defensive proteids" by Dr. Hankin, and so well described by him and by Dr. Hunter, may neutralise tuberculosis and other maladies in man, and if they do we shall be thankful for this tardy salvation; but these inquirers look forward to a preventive use of their proteids, a use which shall anticipate the malady as vaccination anticipates variola, or as Pasteur's inoculations prevent hydrophobia. This would be preventive medicine not only in essential nature, but also in opportunity and practice. Now the sphere of preventive

medicine has extended so enormously that the mere words "growth" or "increase" do not give us a proper sense of its invasion unless we qualify them by more than mere epithets. The change is rather one which profoundly alters the theoretical aspect of therapeutics. Not only savages, hakims, Borrow's wild Spaniard, and our own populace all regard therapeutics simply as curative, but in its main function medicine has been so regarded by almost all schools of the art—I say "almost," because in the school of Hippocrates the scope and use of preventive medicine were foreseen. If, then, antidotal medicine belongs strictly to the domain of preventive medicine; if our quinine should, figuratively speaking, be poured out upon our marshes rather than upon such marsh poison as may have entered a human body; if our therapeutic proteids are to be elaborated as defensive vaccines rather than as cures for disease, or if in any case they combat not the disease but the injurious agent, whether within or without the body; if, again, plagues such as typhoid fever and cholera be extinguished by preventive medicine, as typhus fever already has been; nay, if poisons like the rheumatic, formed within ourselves, are to be annulled by preventive medicines, such as salicylic acid; if all our "specifics" turn out not to be specifics for diseases at all, but destructive of their causes; if some palsies and some mental diseases turn out to be due to alcohol, some others to syphilis, others to lead, and so forth; if some renal and some hepatic diseases are due to external causes; if cancer turn out to be a parasite or in any case to be inexpugnable, and so forth,—then one may begin to cry, Where is curative medicine to be found? Has the notion of curative medicine always rested upon a misconception? In reply to this question, we must look for curative medicine in two directions: first, as a power to promote recovery from injury of external origin; secondly, as a power to mitigate or remove diseases arising within the body itself: such, on our present views of them, may be gout, rheumatism, diabetes, a number of diseases of the central nervous system, of bloodvessels, of lymphatics, and of the viscera, and so forth. As an example of the former category, I will take a case of hyperpyrexia in typhoid fever: herein a state caused by a poison not previously prevented is properly said to be cured when it has been successfully met by cool bathing. As an example of the second category, I will take a case of spasmodic asthma arising by reflexion from some distant point of irritation, be it in the nose or elsewhere, which is cured by medication of the eccentric lesion.

So far have we come on the broader lines of thought. Let us now push forward our analysis into somewhat narrower ways. Even in the treatment of diseases still regarded as autogenetic, is there not a division into means of prevention and means of cure? And is not prevention here also largely gaining ground upon cure? Consider that if in gout we have a human body so constructed as to be an acid-making machine of a particular kind—be the peculiarity of the kind in the nervous system, in the hepatic system, or where you please,—and that we admit the great virtues of curative treatment in such a body—the virtues, say, of blue pill, of colchicum, of alkalies,—do we not admit, valuable as are these curative agents, that yet they hold a subordinate place to regular exercise and air, diet, place of residence, the use of mineral waters, and so forth, which come under the head of preventive medicine? Thus, however closely we investigate the subject, still we find that preventive medicine is gaining upon the curative. Nay, in so far as it be true that the disease of which granular kidney is a main feature owes its origin in many cases to this gouty habit, we shall grant that the only direction in which we can look with much hope for an escape is in the direction of preventive medicine. Curative medicine may triumph in an attack; but prevention will be our plan of campaign, and will lead to far wider and more permanent results.

For a large number of diseases we must sadly admit that we have no treatment whatever, preventive or curative, for of their causes we know little and of their cure nothing. If we turn to nervous diseases we find, no doubt, some remarkable agents having a truly curative action, for in neuralgias and in such neuroses as angina pectoris, gastralgia, and epilepsy, cure opens brilliantly, and the recent discovery of such means as the nitrites leads us to sanguine hopes of further achievements of a similar kind. It will be observed, however, that these remedies too often touch but the periods or dynamic aspects of the maladies I have mentioned, and seem even at early stages to have little or no effect of permanent cure upon them. Soporifics, again, have been industriously discovered and amended, but, save in certain rare crises, only to be reprobated; for the treatment of insomnia, like that of chorea, is regarded by more intelligent physicians as belonging to the domain of prevention or of the modification of the external conditions. On the other hand, we have a long and direful list of nervous diseases from the highest centres to the lowest, from cell to fibre, from patch to patch, for which we have neither means of prevention nor means of cure, and for these, as a matter of habit, we exhibit certain fashionable formulæ of belladonna, silver, phosphorus, zinc, strychnia, &c., on the principle of exhibiting rosemary to the devil; we administer the actual drugs hour by hour, but it would be simpler and safer to sew up the prescription in a bag and let the sufferer hang it about his neck. Yet knowing as I do the eminent importance of stimulating the hopes and animal spirits of the patient and winning him over to the side of the doctor, I shrink from dissuading you from the use of these useful "survivals" until we have some better means to offer, or until the scepticism of the public grows too strong for us. These changes, however, are coming about. When I began practice, to have dismissed a patient with good counsel and instruction, and without a prescription, would have been as much as one's professional life were worth; whereas nowadays we hear of such things being done with impunity, or even with credit.

In diseases of the chest we find interesting matter on both sides of our inquiry. Our better knowledge of digitalis has fully revealed to us the virtues of one of three or four wonderful remedies of the curative class which we possess. The discovery of strophanthus is a welcome addition to the list; like digitalis, its preventive uses are as little as its curative uses are great. I will remind you also of the rediscovery of the value of small venous bloodlettings. Taking heart diseases as a whole, and not forgetting the rheumatic class, we must admit that here preventive medicine has made little progress, while curative medicine has made much; the more or less abiding cures of heart diseases now seen in our daily work prove, indeed, one of the most remarkable advances of modern clinical practice. On the preventive side I can recall little beyond vague precepts of general hygiene, unless it be the estimation of mechanical causes in the production of chronic aortitis. Yet how much is to be done here! Let us try, for instance, to ascertain why cardio-arterial degeneration is almost unknown in other mammalia.

When we turn to pulmonary disease the tables are turned. Without forgetting the occasional aid of emetics, and even bloodletting, at critical moments in acute general bronchitis, which are no novelty; when, on the other hand, we regard the row of dusty bottles and boxes containing endless balsams, expectorants, emollients, and other trash now half forgotten or handed over to herbalists; when we remember how rarely we now use even senega, the best of these, and how exclusively our attention is given to minute regulation of the patient's atmosphere, clothing, and other external conditions, with due recognition of the necessary course of the three stages of the malady, we shall realise how far preventive medicine has here penetrated. A person subject to recurrent bronchitis must be treated almost wholly on preventive methods, and drugs almost as wholly excluded. Of the drugs I have seen administered in acute pneumonia, I can recall many most injurious, many which retarded crisis and convalescence, none which were of use; and Dr. Sidney Coupland, I find, is much of the same opinion. In all these cases, of course, I speak of medicines directed against the disease itself, not of those properly and effectively used against some inconvenient or dangerous incident, such as hyperpyrexia or delirious insomnia, which depends upon an idiosyncrasy or special circumstance of the case. Where, again, are the hundred-and-one boasted remedies for phthisis? What cool observer really relies nowadays even upon the well-puffed hypophosphites, or looks upon cod-liver oil in any other light than as an excellent alternative to suet pudding or rum-and-milk? We know that the treatment of phthisis is now wholly based on principles of prevention, whether these be applied to the suppression of the cause or to the arrest of the mischief which may follow.

I must not weary you by pursuing this subject into all or into any great part of its proper extension, and must content myself with a reference to a few more prominent instances, such as the prevention of renal and vesical calculus, the

prevention of cystitis by antiseptic precautions, of glandular disease by purification of the associated mucous tracts, of spinal curvature by a special gymnastic, of a group of cerebral and other diseases by reduction of alcohol, of another group by dealing with the propagation of syphilis or the neutralisation of its poison, of certain phases of insanity by social reforms, of others by the reform of individual habits, of uterine disease by reforming the customs of women and offering to them new purposes of life, and so forth. How thankful should be the apoplectic patient to be saved the aggressively curative attacks of our fathers in their time; how thankful the sufferer from pulmonary hæmorrhage to be more skilfully nursed and less vigorously medicated. How bright, again, is the success of preventive medicine in the nursery, whence it has banished calomel, brimstone, and the powders of Gregory and James, and has transformed the bringing up of children, to their infinite happiness and physical improvement! But what need of further evidence to prove that while the advance of curative medicine is readily summed up in a few brilliant episodes, the advance of preventive medicine is along the whole line with a steady and uniform tide that knows no ebb.

Let us now wait a moment, and see what is to come of this advance of preventive medicine and of this comparative retreat of curative medicine. We must, I think, restrict ourselves to two points of view: firstly, the natural history of organic diseases; and, secondly, the effect upon the physician of the change in his function from hakim to teacher and guide.

Firstly, we must learn to realise that gross organic diseases as seen in the morbid tissues of the post-mortem room are beyond therapeutics—are our failures. Time is not ill spent in the investigation of them; nay, they represent necessary terms of series, but they are no more maladies than skeletons and mounted skins are natural history. They will teach whither a certain course of change will lead, but the essential thing for us to learn is not where it ends, but where it begins. It is an excellent thing to have the knowledge and the means of treating the bruises, the sprains, the broken shins, and the broken bones of travellers who have deviated from the right way, and, moreover, of collecting their remains and making thin sections of these after they have fallen over final and inevitable precipices; yet, surely, this is but provisional art, and to perfect our art we must trace the points at which these errors first occur, and ascertain the main lines of aberrancy and the phenomena which mark them. I will not fix my eyes on too remote a prospect, I will not contemplate a knowledge so perfect and an art so final as to ensure that every individual shall come into the world flawless and with a full store of implicit energy, when all accident shall be averted, and when every man shall live out his calculated days; but I will more soberly anticipate the time—not, perhaps, very far before us—when it shall be a rare and unreasonable thing for a man of average constitutional value to drift into granular kidney disease, into cardio-arterial degeneration, into insanity, into chronic gout or gravel, into diabetes, into phthisis, or any other twisted and defective state of function, without the means of having his diathesis, his morbid tendencies, and his menacing circumstances measured and explained in their initial stages and, as far as possible, counteracted. This is the future of medicine, and this is preventive medicine. Careless or wrong-headed persons, persons too heavily burdened by misfortune and care, and persons born with defective constitutions—these may fall into disease under the eye of the physician and may not be saved, or disease in them may reveal itself too suddenly for counteraction, though this is a matter of rapidity of foresight; but putting such a small minority as all these should be on one side, our art should be ashamed to admit, a physician should be ashamed to confess, that in the first instance individual characters had not been delineated, hereditary tendencies not calculated, adverse circumstances not adjusted; that in the second instance irregularities of function had remained unrectified and slight static changes had become established, so that wider oscillations of function began to shake the system, and uneasy sensations to be felt in consciousness, and mischief to be so fixed that complete recovery became impossible, and the patient thenceforth was consigned to the sphere of curative medicine! It should be the pride of the physician of the future to delicately weigh where he can weigh, to measure where he can measure, and to push forward accurate measurement into the sphere of phenomena now imponderable and immeasurable, and thus, knowing the weak elements or irregular tides of each one of his patients, so to counteract their false periods that he may point, not to notes of murmurs and râles, of estimations of sugar and albumen, of motor or electric perversities, and ultimately of interesting necropsies, with details of organic débris in bottles, and of exquisite microscopic sections in cabinets, but to so careful a guidance of his patients that neither frailty of ship nor dangers of channel have prevailed against them. In his note-books functional disorders shall be corrected in their early stages; no accumulation of functional disorder shall be allowed to develop into disease and into untimely death. As I said in my Address in Medicine at Glasgow in 1888, we have to classify disease and disorder anew on a natural system of affinity, and to use our present topical system for indicial purposes only. We must begin to track out and to connect in our minds pathological aberrancies as they run in family trees, and thus studying the evolution of maladies we shall gradually establish the kinship of many which show no superficial resemblance or topical concurrence, and learn the signals of approaching danger. But as yet proceedings in the Court of First Error, if I may use such a metaphor, are almost unknown, though the researches of Mahomed, Broadbent, and others into the first beginnings of abnormal arterial tension are an excellent instance of the kind of clinical investigation of which we stand so much in need.

I will now hasten on to the second question—viz., how will all this affect the present relations between doctor and patient? Radically, no doubt. When the public has once grasped the great truth that preventive medicine must occupy the ground hitherto given up to mere sorcery or the occasional patching of curative medicine, and has become convinced that medicine is an art of continuous vigilance, not of casual repairs, then a new relation will spring up between physician and patient which will be more responsible and more honourable. To run after "cures" will be recognised as a belated effort or a naked absurdity; and the restoration or preservation of health will be seen to depend, not upon particular prescriptions or fashionable doctors, but upon a system of treatment carried out patiently and loyally over long times and in minutest detail. To what do the gouty owe their relief when they seek the wells, or the consumptive when they seek new climates? Partly, no doubt, to some virtue in the waters or in the airs; but the more I saw of the cases in such resorts, the more convinced I became that however important these instruments may be, yet success was due less to these than to a rigorous system of management well planned in all its parts and details by experienced physicians. The patient who goes to Harrogate, to Davos, or to Carlsbad with no single eye to the purpose of his visit and under no close regimen will do little good. The patient who, going to such a resort, submits himself at once to close regimen and follows a fully elaborated plan provided for him, will find more benefit even if he chance to reach a less-favoured spot. Hence the very various reports received of similar patients under treatment at baths or sanatoria. Twenty years ago, at Harrogate and at Bath, for instance, all system had fallen into disuse, the waters were regarded as a charm, patients came and went, chatted with a physician, drank the waters more or less, did much as they pleased and more or less badly. Then, when at Aix-les-Bains, Carlsbad, and elsewhere, the eminent importance of a rigorous system became manifest, other watering-places had to mend their ways, to the enormous benefit of their visitors. Why do cases of phthisis often improve in so evil a place as Brompton, and so badly when lodging at Margate, Bonchurch, Oratava, Davos, or where you please? Because in the latter places the patient often thinks it sufficient to be armed with a "prescription" and "general directions," while in the former, as at Gerbersdorf, he is submitted to the hourly, nay constant, pressure of a therapeutic system thought out in its smallest details. Now this important matter of a closely environing system, so important that with worse means it achieves more than do better means without system, applies to the relief of all disorders, and not only so, but to the rectification of every initial error in the human constitution. The subtlety, complexity, and evasiveness of nature must be matched as nearly as possible by a counterplot as vigilant, as minute, and as various. The comparative tendencies of various races to vary in function must be mapped out, and the modifying

influences of climate, food, and work duly estimated. Anthropologists are already labouring to record the phenomena of physical feature in individuals, and to reduce therefrom some standards and some indications of tendency. But I must not give myself rein on this fascinating subject, having sufficiently shown my meaning and led up to the new relation between doctor and patient. The new medicine will be fatal to Sir Oracle with his carbonate of soda and bismuth, and to Dr. Nostrum with his stranger hieroglyphs, and men will rely upon a highly instructed adviser who knows them individually and their ancestry, who gives few prescriptions, but much teaching, vigilance, and accurate measurement. Will it not be to purify and elevate the profession when society shall no longer ignore the learned and scientific investigator, and, giving him the go-by, rush to the chambers of some manœuvring and ostentatious person who has made himself an illegitimate fame by flattering its follies, by writing in its journals and magazines, or even by paltering with its vices; when educated men shall realise that medicine is at best a preventive system, and only a curative intervention in its failures, and understand that the functions of childhood are the parents of the functions of manhood, and these again of the functions of age? But, it may be said, if a man is set to watch the state of his functions by day and night, by month and year, even by generations and centuries, and to watch external circumstances as they affect his body, heart, and mind, shall we not produce an introspective, hypochondriacal race, whose attention will be thus withdrawn from higher duties and energies, and who will haunt the chamber of the physician rather than engage in the conflicts of daily life. No, surely! What can be more searching in our own day than the laws of our social organisation, what more comprehensive than the system of it? Yet, by the force of habit and the education of social pressure, a man manages to keep the laws of country and conscience and the regulations of work and amusement without the continual presence of a solicitor or a priest in his study, or of a policeman or inspector on his doorstep, and without the increase of morbid conscientiousness or intellectual timidity. It is a new point of view and new habits rather than a selfish anxiety which we desire to encourage; we seek to substitute the calm strength of prescience and timely adaptation for irregular blunderings between ignorance and panic. The best traditions of medicine have favoured this interpretation of our duties; progressive enlightenment is finding for the more honourable of our honourable instincts a permanent intellectual basis, and this wider knowledge will with ever-increasing power mould the mind of the public and lead men to regard us as rational interpreters of natural processes rather than as clever cooks, and the faculties committed to us rather those of teaching and guidance than those of absolution and remission.

Let me not seem to say there is no place for curative medicine; what I say is that curative medicine possesses a few agents of primary and direct importance, and a few more of great incidental importance, but that a large part of our medical prescribing is a survival from old times and old creeds, and that the drift of the modern art is more and more to restrict it and to replace it by preventive or re-adjustive methods. For even the intensely interesting inquiries into the relations between the functions of certain organs of the body and certain chemical substances artificially varied in molecular constitution promise, I think, to throw light upon physiology and the genesis of disease, rather than to add to our list of curative remedies. The prominent and often even exclusive place, therefore, given to the writing of prescriptions and the swallowing of drugs is not only unwarrantable but positively mischievous, in so far as it leads the public, not to mention ourselves, to attach primary importance to measures at best auxiliary and palliative, and in so far as it blinds us to the far greater importance of studying the earlier and lesser deviations of function and of readjusting the conditions under which the individual lives exist. We are led by our old habits of thought to regard life as a thing of the body alone, and to forget that life lies between the body and the medium, and is, as it were, a play of activities between two surfaces, so that the medium needs as much preventive or curative vigilance as the body does, and is far more within our power and comprehension. Happily, we know the bent of the living organism is under favourable circumstances towards the recovery of equilibrium, and it is for us to see that circumstances are made to favour it.

To turn to my own department of insanity, the necessary seclusion of the sufferer has led incidentally to a concentration of attention upon the medium as a factor of living function, and the influence of surroundings upon the mental faculties has thus been better studied and understood in mental diseases, because it could be more thoroughly handled than in the case of diseases which do not compel the removal of the patient from his usual world. The play of mind lies not in the nervous centres alone, as I have said, but in the relation of these to external conditions, so that such agents as pleasant scenes, musical sounds, the sympathy of friends, the gentle exercise of the faculties in new fields, the gaieties of society, the peace of repose, and so forth, develop, modify or medicate the mind, as the case may be, and are as material in their action as any other vibrations acting upon sensitive structures. It is possible that, owing to the special opportunities for such remedial means and the success of them, attention has been devoted too exclusively to the external factors of mental life; but, surely, those, on the other hand, who are now busily seeking to bring insane persons back to hellebore are working against the light.

Gentlemen, I have ventured to set before you such partial glimpses of truth as may have been vouchsafed to me. It is not likely that any great change in the mental attitudes of doctor and patient will take place in our day. Indeed, all wholesome change is gradual, creeping from point to point; yet he knows best and does best who best foresees—and herein is my excuse, if I am to be excused, for delivering to you this evening so unpractical a discourse.

[NOTE.—In THE LANCET of Oct. 3rd is a leading article upon an address published by Prof. Nothnagel in the *Berliner Klinische Wochenschrift* of Sept. 28th, 1891, which, so far as I may venture upon any comparison, deals with the very matter of my own address at Nottingham. Indeed, so nearly identical is the subject that I feel it due to the Editors of THE LANCET to say that although my address was not delivered until Oct. 7th, yet I find from my diary that it was "finished" at the Eagle's Nest, in the Valley of Sixt, on Sept. 21st, and was on my return to England on Oct. 2nd placed at once in the hands of a firm of typewriters. About a dozen lines at the end were added in pencil in the train on my way to Nottingham. I did not see the article in THE LANCET until Oct. 11th. Prof. Nothnagel's address I have not yet seen. May I remind the readers of THE LANCET of the definition of curative medicine in the leading article to which I have referred. The writer says, on page 774: "A cure consists in so modifying pathological processes, be they chemical or physical, functional or dynamic, as not only to arrest them, but to restore to a state of physiological and anatomical integrity the organs and tissues that have been deranged." And on page 775 he says: "The cure can only take place through vital organic processes, and to medicine belongs the task of determining what outside support can be rendered to the *vis medicatrix naturæ*."]

# An Address
ON THE
# PATHOLOGY OF INFLUENZA, WITH SPECIAL REFERENCE TO ITS NEUROTIC CHARACTER.[1]

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MR. PRESIDENT AND GENTLEMEN,—I purpose to show in this communication that the virus of influenza attacks primarily, not, as is generally believed, the mucous membranes of the respiratory tract, but the nervous system of the sufferer, through the agency of the blood; and that the symptoms of the feverish attack, as well as the sequels and complications of the disease are owing to irritant poisoning of a definite portion of the nervous centres. The word "influenza" being somewhat long, and, as it appears to me, not very happily chosen, I have in the present paper frequently used the term "grip"—by which the disease is

[1] Read before the Medical Society of London on Nov. 2nd, 1891.

known in Germany and France, but spelt as an English word—as synonymous with influenza. I hope that this innovation may be generally accepted, not only because the term is short, but also because it graphically denotes the suddenness with which the disease attacks the patient. Another reason for accepting the term "grip" as equivalent to influenza is that it is really impossible to speak of the "influence of influenza," as one often feels tempted to do when talking or writing about it; while the "influence of grip" may pass muster anywhere. There can be no doubt that the epidemics of grip of the years 1889-91 have been the most interesting medical event of late years, and that they have taught us a great many lessons which we did not know before. Indeed, the disease, not having appeared in England in an epidemic or rather pandemic form for many years past, was unfamiliar to the present generation of practitioners, more especially as in numerous cases the signs of catarrh of the respiratory organs, commonly called "influenza cold," and which were generally believed to be characteristic of the complaint, were either slight or completely absent, the most striking symptoms of the distemper having been in the majority of cases a sharp and short attack of fever, great physical and mental prostration, and severe pain in the head, body, and limbs, most or all of these symptoms ceasing as suddenly as they had appeared.

In accordance with our present views as to the mode in which infection takes place, I look upon the symptoms of influenza as owing to the action in the system of a special toxine secreted by a pathogenous bacillus. I regret to say that the results of numerous and laborious researches made by competent observers on the bacteria of grip flatly contradict each other, and that nothing definite is as yet known about the morphology of that micro organism, or about the chemical constitution of its poisonous secretion. All I feel it prudent to advance with regard to these points at present is that the life-duration of the bacillus seems to be in the majority of cases a short one, inasmuch as the stage of incubation of the malady does not appear to last longer than two or three days, and the attack of the disease from two to fifteen days, while the patient may remain a focus of infection to others for about a week or ten days longer. On the other hand, the virulence of the toxine secreted by the parasite appears to be most remarkable, causing, more especially when it falls on a suitable soil, an immense variety of severe symptoms, not only during the primary attack, but also in many cases for a long time subsequently, leading not unfrequently to a fatal issue, or to such destructive lesions of important organs as to tend to disable the patient for life.

Why should the attack of grip end in some cases suddenly, with profuse perspiration and all the other symptoms of a crisis, leaving the patient weak, but really not much the worse for what he has gone through, while in other instances its course is much more protracted, and attended with dangerous complications and sequels? It appears to me that we can give a tolerably plausible answer to this question by reference to what takes place in pneumonia, which has been much better studied in this respect than grip. In pneumonia, as in most other infectious diseases, it is not so much the circulation in the blood of a special bacillus (Fraenkel's diplococcus), or the number of these micro-organisms, which kills, as the poison secreted by them. This poison, which has recently been isolated by Klemperer, causes the fever and the consolidation of one or several lobes of the lung, and endangers life by depressing the vital energy of the nervous centres of respiration and the heart's action. After this pneumotoxine has circulated in the blood for a few days, an antidote to it—the anti-pneumo-toxine—is formed, by the aid of the poison itself, in the serum of the patient, and neutralises the poison so as to render the serum innocuous, when there is a crisis, and the patient recovers either completely or incompletely, according to the quantity of the anti-toxine which may have been formed.

Let us now apply the results of these researches to influenza, which appears justifiable on account of the similarity of the morbid processes in the two diseases. I assume, then, that the patient having acquired infection, a poisonous albuminoid secreted by a special pathogenous bacillus, and which I will call the *grippo-toxine*, circulates in the blood, and causes the special symptoms of the feverish attack. In a day or two, however, an antidote, which I will call the *anti-grippo-toxine*, is formed in the serum of the patient. Now let us suppose the quantity of this antidote to be in a given case sufficient for neutralising all the poison which is circulating in the blood; and there will be a crisis, with a sudden fall of temperature, profuse perspiration, and relief to the distressing subjective symptoms. If, however, the quantity of the antidote should be too small to neutralise all the toxine which may be present, the course of the disease will be protracted; there will only be a pseudo crisis, and complications and sequels of different kinds will follow. By the aid of this theory we may also explain why *immunity* which has been acquired by a patient may subsequently be lost again. Let us suppose that all the anti-grippo-toxine which has been formed in the serum has been lost, and that the patient is again exposed to infection. A second, or even a third, attack of grip may then take place in the same individual, just as we meet occasionally with a second or third attack of measles, pneumonia, or rheumatic fever in the same patient. The theory which I have just proposed appears, therefore, to explain satisfactorily—(1) why patients acquire influenza; (2) why they recover from it, either perfectly or imperfectly; and (3) why, after having had it once, they may contract it again a second or third time.

I now proceed to the next portion of my subject, which is to show that all the symptoms of the feverish attack of influenza are referable to irritant poisoning of a definite centre of the nervous system. Let me first show you the steps by which I have arrived at this opinion. Shortly after the visitation of influenza had commenced, I was surprised to see, both in hospital and private practice, a number of patients complaining of severe forms of neuralgia, loss of power, and a general break-up of the nervous system, which they attributed to an attack of grip which they had recently passed through. Some of these patients had been in perfect health before, so that the grip appeared to be the *fons et origo mali* altogether; while in others a neurotic pedigree or a previous syphilitic infection, or some other constitutional fault could be clearly traced, upon which the subsequent nervous affection had, as it were, been grafted. I also found that the number of nervous sequels which appeared after influenza was largely in excess of other post-febrile neuroses, of which I had seen numerous examples in the course of my practice. In comparing those nervous troubles which may be met with after such diseases as diphtheria, typhoid fever, scarlatina, smallpox, measles, erysipelas, and malaria with those seen after influenza, none of them—nor, indeed, all of them put together—approached in number the nervous sequels of grip. This I attributed to the circumstance that more than half the population of the country had lately been down with influenza, while the number of patients suffering at any one period from other fevers is always very much less. There was, however, also a much greater variety in the nature of post-grippal neuroses perceptible than in others, which run in comparatively narrow grooves. Indeed, it soon became evident that as a powerful etiological factor of all kinds and forms of nerve disease influenza stands *facile princeps* among all infectious fevers. The only distemper which approaches grip in this particular quality is syphilis, which may also give rise to the symptoms of almost any nervous diseases. I find a still further analogy between these two infectious diseases in the circumstance that in both we may have a primary attack, secondary symptoms of a comparatively mild character soon afterwards, and tertiary affections of a more dangerous and obstinate nature, affecting the organic structure of tissues, at a more remote period. Grip also seems occasionally to revive an old syphilitic infection which has lain dormant in the system for years, and thus indirectly to give rise to certain diseases of the spinal cord, which are known to occur habitually on a syphilitic base. In comparing the degree of virulence of the two poisons, however, I have found that when the grippo-toxine attacks the structure of organs, it often does so with far greater ferocity and in a more ruthless manner than the syphilitic virus. Thus we see sometimes incurable blindness from optic atrophy, spastic spinal paralysis, and general paralysis of the insane becoming fully developed in a few days, weeks, or months from the outbreak of the feverish attack; while these diseases, when owing to syphilis, take years to become fully developed, and are also more amenable to treatment. When I had once realised this extraordinary tendency of grip to be followed by nervous sequels of almost any description, it was only a short step to the further inquiry whether the chief reason of this peculiarity might not be

found in the circumstance that the distemper itself, in its primary manifestations, is not so much an infectious catarrhal fever, as has been generally assumed, as an infectious nervous fever. A clinical survey of the symptoms of the feverish attack rendered this, *primâ facie*, not unlikely, as many of them, such as headache, utter prostration of mental and bodily strength, delirium, coma, convulsions, &c., point unmistakably to the nervous system as their starting-point; while, on the other hand, catarrh of the mucous membranes and pneumonia have been completely absent in a large proportion of cases. Indeed, many patients have had influenza badly without having once coughed or sneezed.

The great varieties observed in the symptoms of the feverish attack of grip have induced a number of observers to assume three different forms of the disease—viz., the nervous, catarrhal, and gastric variety. I wish, however, to impress upon you most strongly what I am convinced to be the fact—viz, that these three forms have not any different pathological characters, but that *influenza is always a true nervous fever*, the symptoms of which only differ as far as localisation of the grippo-toxine in different areas of the nervous system is concerned, and that the three forms just mentioned are perfectly arbitrary, however much sanctioned by authority. I shall therefore now endeavour to prove to you that the first or nervous form is that in which we have to do with the effects of the grippo-toxine upon the thermolytic, cardiac, and other centres of the medulla oblongata; that in the second or catarrhal form the special nervous mechanisms formed by the fifth pair and the vago-accessory nerves which supply the mucous membranes of the respiratory tract are suffering; and that in the third or gastric form the symptoms are owing to poisoning of those portions of the nuclei and branches of the pneumogastric nerves which supply the abdominal viscera, with occasional extension of the shock to the sphere of the splanchnic nerves, which constitute a vaso-motor centre for the whole abdominal cavity, and which anastomose with the pneumogastric in the cœliac plexus.

1. *Nervous form of influenza.*—One of the most important symptoms of this variety of grip is the fever, which shows considerable peculiarities. But before discussing this let me ask the question, Are there any afebrile cases of influenza? Time will not allow me to enter further into this matter except to say that I have seen a number of cases of what I fully believe to be chronic infection of the nervous system with grippo-toxine, the principal symptom being intense mental depression, which may lead to suicide. Of the peculiarities of the fever of grip, I will in this place only state that there is no parallelism between the degree of temperature and the severity of the illness, as is the case in the eruptive fevers and other acute diseases, and that it is therefore unimportant from a prognostic point of view. How is the fever to be explained by the neurotic theory of grip? Most pathologists hold at the present day the doctrine that the fever heat is owing to increased production of heat, which is caused by irritation of the thermogenetic centre in the caudate nucleus. I have, however, long been of opinion that the opposite contention first put forward by Traube is nearer the truth—viz., that the fever heat is owing to increased retention of heat or diminished loss of it. This theory has quite recently received considerable support from the experiments of Rosenthal, of Erlangen, which appear to have been very carefully made; and I would therefore explain the fever-heat in grip by *congestion of the thermolytic centre* in the bulb, which regulates the loss of heat which is constantly taking place through the skin and lungs, and which includes for this purpose the vaso-constrictor centre which presides over the action of the bloodvessels of the skin, the sudoriparous centre which controls the action of the sweat glands, and the respiratory centre which regulates the movements of the lungs (Hale White). As long as this thermolytic centre continues to be irritated by the grippo-toxine circulating in the blood, the fever continues; but as soon as so much antitoxine has been formed in the serum as is required for neutralising the action of the toxine, there is a crisis, with a sudden fall of temperature, profuse diaphoresis, loss of heat through the skin and lungs, tendency to sleep, and relief of all subjective symptoms.

I have just referred the fever of grip to congestion of the thermolytic centre in the bulb. Indeed, no one who has watched and considered the clinical symptoms of the feverish attack of grip will deny that congestion must be looked upon as the principal pathological process which is at work during that time in the system. It is true that the symptoms are often so severe as to indicate at first sight inflammation. More especially in children, grip begins sometimes with what looks like symptoms of meningitis. There is intense headache, vomiting, constipation, grinding of teeth, rigidity of the neck, convulsions, delirium, and coma; yet the sudden defervescence of the most alarming signs, which may be noticed twenty-four or thirty-six hours after their commencement, renders it certain that there can have been no inflammation or effusion, which require a much longer time for their resolution or absorption. Congestion, on the contrary, we know to be liable to very sudden modifications and variations under the influence of various agents, or after the cessation of certain causes. This opinion is also supported by the fact that in cases which looked like meningitis a sudden improvement has often ensued in consequence of profuse epistaxis setting in. Moreover, we actually see congestion in that suffusion of the conjunctiva and swelling of the eyelids which are met with almost invariably in grip. Inflammation, however, does occasionally occur in various organs when the irritation of the vaso-constrictor centre in the bulb reaches a very high degree. Thus we see meningitis (Fraser, Mackay), cerebral abscess (Bristowe), and a variety of other inflammatory affections, such as otitis, glossitis, keratitis, optic neuritis, endocarditis and myocarditis, nephritis, orchitis, &c. While I explain the occurrence of most of these inflammations by excessive irritation of the vaso-constrictor centre in the bulb, some of the more specific inflammations which are also liable to happen, such as erysipelas and pneumonia, in which special bacteria are known to be the exciting agents, are more probably owing to the loss of the power of phagocytosis in consequence of the illness. Microbes, which in health are habitually destroyed by the leucocytes as soon as they appear at the entrance gates of the system—*quærentes quem devorent*—are then readily admitted and allowed to multiply in the blood, with the result of causing specific inflammations.

*(To be concluded.)*

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ON THE

# SPREAD OF INFLUENZA BY CONTAGION.[1]

BY RICHARD SISLEY, M.D., M.R.C.P. LOND.

SIR JAMES MOORE, in a paper which he recently read before the Epidemiological Society, strongly pointed out the injurious effect of attaching too much importance to "authority" in matters of science. I have lately been much struck by the truth of this observation. Until the occurrence of the epidemic of influenza in 1889–1890, very few living physicians knew from personal observation anything about the disease or of its method of spread. We had, therefore, to rely on the teaching of the past, and I think many of us attached almost implicit reliance on the statements of Sir Thomas Watson, many of whose observations we have been able to verify in the case of other diseases, and whose writings possess a charm which is certainly absent in current medical text-books. On the method of the spread of influenza Watson taught that contagion played but a small part. "I have remarked,"[2] he says, "that Cullen makes this species of catarrh to proceed from contagion. But the visitation is a great deal too sudden and too widely spread to be capable of explanation in that way. The occurrence of epidemic catarrh, as well as of most other epidemics, is unquestionably connected with some particular state or contamination of the atmosphere." This teaching was, I think, generally accepted, and Watson's classical description of the disease as it occurred in 1837 was extensively quoted. But the epidemic of 1889-90 was by no means a sudden visitation. There were isolated cases in different parts of this town long before there was any general infection of the population. Many of the first sufferers were seized immediately after their return from Paris, and some of the first cases I saw were patients from hotels where foreign travellers had been staying.

Early in the epidemic facts came to my notice which pointed to contagion as an important means by which the disease was spread. The infection in the earliest case re-

[1] A paper read before the Epidemiological Society on May 20th, 1891.
[2] Lectures on the Principles and Practice of Physic. London, 1858.

corded in England[3] was, I believe, contracted at a Christmas party, and I felt convinced that I took the disease from this patient. Early in January, whilst I was out of town trying to get over the effects of the malady, I was called to see a lady who had a recurrence of the disease. A young lady who was staying with her, and who was much with her both by day and night, soon took the disease, and in her turn, as it seemed to me, communicated it to a servant who was with her in a house to which she afterwards went. These observations are not in themselves striking, and I only quote them because they inclined me to the view that the disease was contagious, and that idea, together with a knowledge of the fact that influenza in London occurred at first in isolated centres, led me to take an interest in the general spread of the disorder through England, and I became doubtful about the truth of the conclusions arrived at by Watson as to the method of the spread of the malady. I look forward to the report of the Local Government Board, which will doubtless be of great use in showing (1) the date of the first appearance of the disease in different parts of the country, (2) how far the first cases occurred in people who had come from infected places, and (3) how long a time elapsed between the first appearance of the disease and the general infection of the population. Until the report is published we must content ourselves with the information at present at our disposal, and fortunately the newspapers both of town and of country districts have given many facts.

Without relying too confidently on the absolute accuracy of this information, and making allowance for possible errors, we are able to get a general view of the progress of the epidemic. Edinburgh, it seems, was affected about the same time as London and Colchester. Canterbury and Portsmouth suffered early in January. The disease was spreading in Devonshire and Monmouth during the first week in February, and was raging in Wales as late as March. At Chelmsford, Durham, and Bury it was noticed that isolated cases occurred before there was a general infection of the population, and at the latter place people living in the town were affected before the inhabitants of the surrounding villages suffered. In Nottingham and Birmingham it was stated that the railway servants were the people first affected. It would be tedious and useless to give a full analysis of the information supplied in a collection of many hundreds of newspaper cuttings, but a careful consideration of the material at my disposal convinces me that towns were generally affected earlier than country districts, and the more remote parts of the country later than places near London; that in many cases there is distinct evidence that the disease first occurred in isolated centres; that there is no evidence of the sudden seizure of a large number of individuals without the previous existence of isolated cases; that where there was little human intercourse villages and country districts directly between large towns often escaped infection till some time after the towns were affected. The last mentioned fact disproves the theory that the infection is entirely wind-borne. A valuable observation bearing on this matter was made during the epidemic of 1782, and was recorded by Dr. Gray on the authority of Dr. Ruston of Exeter. Writing of the spread of the disease, he says: "At Dartmouth it began much sooner and at Tinmouth, which lies between both, much later, than at Exeter."[4] I do not think the importance of such facts can be overlooked in a consideration of the method of spread of the disease—i.e., as to whether personal contact or what is called aerial infection forms the chief means of conveyance. The idea that contagion plays a great part in the spread of the disease is a very old one, and as early as 1743, when Rome was affected, the Pope ordered a land quarantine to check its spread. In the same year at Messina a ship suspected of being the means of conveying the disease was burnt, and all letters from foreign parts were perfumed.[5]

The records of the English medical writers are full of facts pointing to the spread of influenza by contagion. In 1782, according to the evidence of Dr. Clark, the disease was imported to Shields from London by a ship.[6] In the same year the first two patients who suffered from the disorder at Norwich were people who had lately arrived from London, where it was then raging. Dr. Haygarth of Chester gave many similar examples. In answer to a question as to the introduction of the disease, he says: "1. That the first patient who had the disease in Frodsham was seized with it as he was returning thither from Manchester. 2. That at Malpas the first patient was the landlady of the inn and her family, affected a week sooner than any other patient in the town. 3. That the first person who had the distemper in Middlewich brought it from Liverpool. 4. That the first person affected with the influenza at Mold has been at Chester a few days before, in a family ill of the distemper. 5. That a gentleman arrived at Oswestry ill of the influenza before the inhabitants were attacked. 6. That at Tarporley the first person seized was a postillion who had driven a chaise thither from Warrington, where the distemper had previously appeared. 7. That at Wrexham the first patient came from Chester, and the second from Shrewsbury."[7] In the epidemic of 1803 similar cases were reported from Exeter, Cirencester, and other places, and there was evidence that the disease was imported into the Isle of Man by a Liverpool packet.

During the late epidemic, I think, sufficient importance was not attached to the contagious nature of the disease, and many medical men thought it played quite a subordinate part in the spread of the disease, or even that the malady was not contagious at all. Thus the Report issued by the Local Government Board for Ireland contains the following passage:—"On the subject of the origin and mode of extension of the epidemic in Ireland the views expressed by medical officers differ, but there was a general consensus of opinion to the effect that the disease was of a miasmatic character, that it was air-borne, that it was preceded and accompanied by high temperature and moist atmosphere. A small number of observers consider it infectious and contagious, but the great majority were of opinion that it was not."

Dr. William Squire, in an article on "The Infection of Epidemic Influenza,"[8] after reviewing the evidence he gives, comes to the conclusion that "the balance seems rather to be against direct infection as a frequent or potent cause of the spread of influenza." The members of the Medical Officers of Schools' Association, who had excellent opportunities for investigating the subject, came to a diametrically opposite conclusion, and most of them believed that contagion played a great part in the spread of the disease.[9] In a valuable paper which was published in the forty-fourth volume of the *Practitioner*,[10] Dr. Delépine recorded cases which point strongly to direct infection as a cause of spread of influenza, and gave a careful analysis of the number of the workmen who were affected at Broadwood's piano manufactory, and the dates on which the patients were seized with the disease.

Several carefully observed cases which point to the importance of contagion in the spread of influenza have been recorded by French observers. Dr. Danguy des Déserts reports that an outbreak on the *Bretagne*,[11] a training ship at Brest, immediately followed exposure to contagion from an officer who went on board suffering from the disease. Professor Grasset[12] has also shown, on the authority of Dr. Bordone of Frontignan, that the origin of the outbreak in that town could be traced to a merchant who returned from Paris suffering from the disorder, and who gave a dinner party to ten people, five of whom were seized with the disease within two days. Dr. Védel of Lunel communicated to Professor Grasset[13] an account of the spread of influenza in that town, and Professor Bouchard has put on record the observations of Dr. Tueffart of Montbéliard. These teach the same lesson. I think, however, that I have said enough to show that the disease is contagious.

With regard to the spread by parcels there is less evidence. Dr. Mease wrote in 1782:[14] "I have no shadow of doubt that the disorder was contagious, and am certain I myself received the infection from a small trunk of wearing apparel which came from Dublin, where it then raged. I may add that this was the first introduction of it into the town."

[3] THE LANCET, Jan. 4th, 1890.
[4] Medical Communications, vol. i., p. 61, note. London, 1784.
[5] Gentleman's Magazine, vol. xiii.
[6] Medical Communications, vol. i., p. 63, note. London, 1784.
[7] Annals of Influenza or Epidemic Catarrhal Fever in Great Britain from 1510 to 1837. Prepared and edited by Theophilus Thompson, M.D., F.R.S., from 1852. I have been unable to find a copy of Dr. Haygarth's original paper.
[8] THE LANCET, April 19th, 1890.
[9] Brit. Med. Jour., May 3rd, 1890.
[10] "Is Influenza a Contagious or a Miasmatic Disease?"
[11] Semaine Médical, 1890. [12] Ibid.
[13] Leçons sur la Grippe de l'Hiver, 1889-90, par le Professeur Grasset. Montpelier, 1890.
[14] Medical Communications, vol. i., p. 56.

Dr. Danguy des Déserts[15] has recorded a case pointing strongly to the conclusion that infection was conveyed by means of a parcel of goods from Paris to an officer at Brest. More evidence on this point is much needed, and I should be very grateful for any fresh information on the subject. The matter is of great importance, for if the spread by goods were distinctly proved, it might explain some of the outbreaks which have occurred on ships at sea.

To sum up the conclusions at which I have arrived: 1. There is no doubt that the disease is contagious. 2. Isolated cases precede a general infection of the community. 3. The part played by contagion in the spread of the disease is most important. 4. There is some evidence in favour of spread of influenza by goods. 5. Influenza is not spread in England by a preliminary "contamination of the atmosphere," but the atmosphere is contaminated by individuals who suffer from influenza.

York-street, Portman-square, W.

## PERIPHERAL NEURITIS ASSOCIATED WITH EPILEPTIC FITS.

BY JAMES CAGNEY, M.A., M.D., M.R.C.P.,

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THE study of peripheral neuritis has been prosecuted of late years with much energy, and has been attended with remarkable results. Inflammatory and degenerative changes of nerves have been found in conditions where they were least expected. It has been shown that whereas, on the one hand, these conditions may exist without giving rise to symptoms during life, they are, on the other hand, competent to explain appearances whose import was hitherto obscure or which were attributed to changes in the central nervous system. Moreover, it has become evident that the pathology of the nervous system requires revision in some directions, and it is probable that a factor of which our knowledge is daily growing will assume an importance much greater than it formerly possessed. It is at once a cause and a consequence of the present activity that facts are observed and recorded which under other circumstances would remain unnoticed. A transitional pathology is to a great extent free from the trammels of theory. I have been unable to learn that any cases have been published showing an association between epilepsy and neuritis. Without imputing to it necessarily any other character than that of a coincidence, I believe that the fact is at the present time worthy of notice.

On July 10th a man was sent to me for treatment at St. Mary's Hospital. He was twenty-nine years of age, and of good physique. He was employed as a shunter on the Great Western Railway. He had suffered since he was a boy from epilepsy, the fits recurring at intervals of several weeks or even months, and from time to time he had been given medicine to stop them. Five days before coming to the hospital he had had a fit of the usual character. On recovering consciousness he rested, without sleeping, for an hour or two, and then discovered that his left forearm and hand were numbed. On examination at the hospital I found that the district supplied by the left radial nerve was completely anæsthetic. There was no loss of muscular power and no impairment of sensation elsewhere. I failed at first to elicit evidence of pain in the course of the radial nerve, but on the occasion of his third visit the patient pointed out that there was a place in his forearm which was sensitive to pressure. This proved to be the spot where the radial nerve passed beneath the tendon of the supinator longus, and the nerve was enlarged as well as tender. The affection caused little inconvenience, and the patient was perhaps dissatisfied with his progress. I lost sight of him sooner than I could have wished. Had anything been needed to rouse my interest, it would have been found in the fact that this patient had experienced once before the same sequence of events—that is, an epileptic fit followed by anæsthesia in the back of his left hand, with pain in the spot referred to, and he informed me that sensation gradually returned without treatment, so as to be complete within a fortnight or three weeks.

When this patient came I had but lately discharged another who had suffered in a manner precisely similar. I was not disposed in this instance to attribute any direct importance to the epileptic fit. I quote the case from short notes taken at the time.

R. S——, aged thirty-five, a fitter's labourer (G.W.R.), came to St. Mary's Hospital on June 19th. Has had fits since he was thirteen, and is under treatment for epilepsy at the National Hospital. Had a fit eight days ago, and slept all the afternoon, as is his custom after a fit. He thinks he slept with his head resting in the bend of the left elbow. In the evening he found that his arm was painful at the bend of that elbow in front and at the shoulder, and the arm was also weak. The patient could not reach his neck to wash it, and had to spend the night with his arm bent back over his head, and supported by the bed-rail. The arm was painful at the shoulder and elbow for some days. Examined (June 19th): Anæsthetic in region of left radial nerve; no other symptoms could be discovered. The faradaic brush was the only treatment employed, and this patient grew quickly well. It remains to be mentioned that both men professed to be of sober habits, and their appearance confirmed the statement.

In the case last reported I adopted the view that the radial nerve had been injured by pressure during the sleep that followed the fit, though I was aware that this would not account for pain in the shoulder and inability to move the limb, the symptoms of which the patient chiefly complained. In the other case, the fact that the man had twice suffered in the same manner merits attention, and he was very positive that he had not injured his arm in any way. To ascribe the implication of a sensory nerve directly to an epileptic fit would be to fly in the face of analogy. If the coincidence had been less remarkable than in some respects it was, it would probably fail to arrest the attention, and would certainly be put down to chance. If it were anything more than a chance connexion the association should be frequent, since epilepsy is very common. I have not found a similar instance in my notes or elsewhere, and I have no recollection of any. In my own case this fact loses weight from the circumstance that my attention was directed to the first instance only by the accident of my encountering the second, and it is possible that others also have passed a similar occurrence without notice. One would certainly not expect it, and expectation and clinical observation are apt to be much in each other's way. If it were established that neuritis frequently followed an epileptic fit, the most reasonable assumption perhaps would be that they depended upon a common cause. Just at present the chief interest attaches to those forms of neuritis which are attributed to a toxic influence, and there is a growing tendency to regard the peripheral changes as only a part of the effects of the morbid agent. M. Brissaud[1] has recently contended with much force that alcoholic pseudotabes may depend upon a focal lesion in the spinal cord, and MM. Blocq and Marinesco[2], summing up the evidence, clinical and experimental, upon which our knowledge of such cases is based, incline to the view that any part of the motor arc, from the cerebral convolutions to the end plates in the muscle fibres, may be the seat of disturbance, which may also be distributed in the most varied degrees of intensity in different parts. Epilepsy is not known to be produced in this way, but mania and the most serious psychical disorders accompany alcoholic neuritis; and it is conceivable that an epileptic fit might be determined in one predisposed to it by an obscure toxic influence, of which the persisting evidence would be some degree of neuritis.

[15] Semaine Médical

[1] Archiv. de Neurol., 1891, vol. xxi., pp. 161–183.
[2] Nouvelle Iconographie de la Salpêtrière, March, 1891.

HANWELL ASYLUM.—The Asylums Committee of the London County Council, at their meeting on Tuesday last, reported that they had received with regret the resignation of Mr. Joseph Peeke Richards, the medical superintendent of the female division of Hanwell Asylum, and that he would leave the service on the 31st of December next. Mr. Richards was fifty-one years of age, and had been in the asylum's service as an assistant medical officer for four years, and as medical superintendent for over nineteen years. The committee, in view of all the facts, and pursuant to their statutory powers, granted him an annuity by way of superannuation as from the 1st of January next of £633 6s. 8d. per annum, and they recommended that the granting of this allowance be confirmed.

## RUPTURE OF THE KIDNEY AND TRAUMATIC ANEURYSM OF THE ABDOMINAL AORTA, THE RESULT OF A FALL FROM A BICYCLE.

BY ERNEST V. EAMES, L.R.C.P., L.R.C.S. ED.

A REPORT of the above case will no doubt interest some of the readers of THE LANCET.

On Sunday morning, July 26th, I was called to see H. B——, aged twenty-one, a reacher in Denby Pottery Works, who on Saturday night got a severe fall off a bicycle. (I may here mention that the machine was not a "safety," but one of the ordinary high bicycles.) The messenger said the patient was suffering from great pain, and was passing blood in his urine. On arriving at the man's house, he was unable to give me any information about the fall or what part of his body came in contact with the ground first. He had been fomented during the night, but the pain was no better. His face was anxious, tongue slightly furred, pulse 100, and temperature 101°; shock was not marked. An examination of the urine showed that the hæmorrhage was from the kidney; the colour was smoky, and the blood had been passed with the urine, and not before or after micturition. Several small clots could be discerned adhering to the bottom of the vessel in which the urine was contained. On examining the patient, there was exquisite pain in the lumbar region, over the right kidney, increased on pressure, shooting forwards and downwards to the right testicle; there was marked retraction of the same testicle. The bowels were constipated. There was some retching after the accident, which had ceased on my arrival. I put the patient on small quantities of milk only, and ice to suck to quench thirst. I also gave him a diaphoretic mixture, and powders containing five grains of Dover's powder and ten grains of gallic acid, one to be taken every four hours. I applied six leeches to the seat of pain in the lumbar region, and continued the hot fomentations and bran poultices, into which the patient bled very freely.—July 27th: Pain no better. The urine contained less clots, but there was no improvement in colour. Pulse 120; temperature 102·2°. The patient did not pass much urine since I had visited him. The skin was acting well. Bowels open; tongue dirty and dry; thirst much worse. The same treatment was continued, everything being taken cold.—28th: Pain still severe, but more anterior than before. Temperature 103·5°; pulse 120. Urine was not voided during the night, but the patient had a frequent desire to do so.—29th: The patient passed a fair quantity of urine about 6 A.M., improved in colour, and containing no clots. The temperature had dropped to 100°, and the pulse to 94. The pain was not severe. The bowels were again opened. Tongue cleaner, and condition generally improved.—30th: Patient sat up in bed yesterday, contrary to all directions, and exerted himself a good deal in many ways. Temperature 101·3°; pulse 76. Tongue about the same as on the previous day. He was suffering from a severe abdominal pain in the umbilical region and vomiting. The urine contained more blood than on the previous day. All pain had left the lumbar region, except on pressure. A mixture, containing bismuth, morphia, hydrocyanic acid, soda, and gentian, was prescribed to stop the vomiting. On examining the abdomen, a large pulsating tumour, which had a distinct thrill on palpation, could be discerned, limited to a space three inches by two, in the region of the abdominal pain before mentioned, and to the left of the median line, immediately over the aorta. The lower end of the tumour was on a level with the umbilicus. On auscultation a systolic bruit could be heard.—31st: Pain better. The vomiting had ceased. The lumbar pain had again returned. The urine was improved in colour. Temperature 99·6°; pulse 62; tongue cleaner; bowels open. Aug. 1st: The patient's condition was improved. Pain less severe. Urine clearer. Tongue clean. Temperature normal; pulse 56. A peculiarity about the pulse might not be out of place here. Taking it by the minute, it was always the same. When taken by the quarter-minute, it was never the same for two consecutive quarters—e.g., 13 first quarter, 16 second, 15 third, and 12 last quarter. I repeatedly took the pulse, with the same result.—2nd: Still improving. Urine clearer. The gallic acid was continued, but Dover's powder omitted. Milk diet continued. The pulse had dropped to 48. Temperature normal; tongue good; bowels regular.—3rd: Urine clear for the first time; on examination it contained a slight amount of albumen. Pulse 44; temperature normal. No pain either in umbilical or lumbar regions.—5th: Pulse 48; temperature normal. Urine clear; albumen less. No pain. The gallic acid was stopped.—6th: The patient was now allowed some fish and dry toast—the first solid food since the accident. He was put on fifteen-minim doses of the liquor ferri perchl. three times daily after food.—10th: He sat up for about an hour to-day. Urine free from albumen. He continued to sit up every day, gradually increasing the length of time, and is now (Sept. 5th) walking about, enjoying fairly good health. The aneurysm does not diminish in size and is still well marked. His pulse has risen to about 60. He passes normal urine in sufficient quantity, and feels no inconvenience from the aneurysm.

I have recorded this case, as, I believe, an exactly similar case has seldom occurred. As to the cause of the aneurysm, the fall itself could scarcely produce it. I believe the patient ruptured one or more coats of the aorta while endeavouring to save himself. A severe wrench seems to have been the most likely cause. Attention may also be drawn to the slow pulse coexisting with the comparatively high temperature.

P.S.—Nov. 10th: The aneurysm seems now to be enlarging. The patient also feels more inconvenience from it than he did before.

Nottingham.

## ON A CASE OF COMPLETE OCCLUSION OF THE OS UTERI.

BY D. BEATTIE BAIN, M.D. EDIN.,
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NOTICES of anomalies which are apt suddenly to confront the medical practitioner in his daily work have their uses, and may even claim a place, albeit a humble one, in medical literature; and it is in the hope that the following case may prove of service as well as of interest that it is here somewhat minutely recorded; for though its importance is not of an eminently practical kind, it has a certain value of its own, lying largely, like that of many other things, in its rarity, its place being mainly rather among the pathological curiosities, or what may be called the romance of medical practice. Yet there is no denying that it is an occurrence which *does* occur, and *may* occur to any practitioner in an evil and unguarded hour; and if it is true that it is the unexpected which always happens, this case may do practical duty as a beacon of warning and an *aide mémoire* in some such time of unexpectedness, for "thrice is he armed" who is forewarned and remembers.

Mrs. T——, aged thirty-four, a primipara, had enjoyed what is usually regarded as excellent health during the whole period of her pregnancy, excepting only that in the latter months she had experienced some slight abdominal discomfort now and then, scarcely amounting to pain, and of which she had never complained, this fact having been elicited only after the termination of the labour. She was a healthy woman, rather small, and of fair complexion; and she inherited a decidedly rheumatic diathesis, for her mother passed through a long illness under my care, suffering from eczema, sciatica, and rheumatic arthritis, while her brother was at least twice attended by me for rather severe attacks of acute rheumatism. She herself, however, had for years previously been remarkably free from illness, the only occasion being a sharp rheumatic tonsillitis, for which I had treated her several years before. She found labour beginning sensibly to assert itself during the evening of May 13th, and I was sent for at six o'clock next morning. The usual report by both patient and nurse agreed in characterising the pains as having been both severe and frequent; but as the lady was moving about, and exhibiting, meanwhile, no visible or audible signs of special uterine vigour, I exercised a comfortable scepticism as to the correctness of this description. On making a vaginal examination, I expected to find an os at the respectable half-crown, or at the most the crown-piece, stage of dilatation. But I found nothing of the sort; in fact, I had not a clear idea at all what it was that I did find. I was

only conscious that I had not found the familiar spot which my senses could distinctly recognise as an ordinary os. I knew that I was confronted with a novel and strange arrangement which in the course of a fairly extensive obstetric experience I had never before encountered. The uterus was rather high up, but the presenting part, which had the usual more or less globular shape, was within reach of the examining finger. This finger I passed in every direction in search of the missing os, believing that possibly it might be so obliquely placed or so high up as to escape detection; but in vain, except that I thought, or half-persuaded myself at least, that a fold of membrane, crumpled before the point of my exploring finger, must really be the edge of the dilated os, in which case the labour must have advanced with unexpected facility. I tried to verify this suggestion, as I am in the habit of doing, and which I find Spiegelberg recommends, by applying half of the hand to the roof of the vagina to ascertain the continuity or otherwise of the vaginal wall with the membrane covering the presenting part. I fancied that somehow there was enough to satisfy my revolving finger and equally revolving mind that this fold must be the dilating os. As, however, the pains were by no means very forcible or very frequent, I resolved to give nature time and opportunity, if possible, to unravel the mystery; and I left with the promise that I would call in the forenoon unless previously sent for. I returned before midday, by which time the pains were recurring with more steady regularity and strength. The state of parts, however, was very much what it was before, with the exception that the presenting part certainly seemed somewhat fuller, larger, and nearer, and gave to the finger a more distinct feeling of elasticity such as the bag of membranes gives. The fold or ridge of tissue formed by the pressure of the examining finger was not now so markedly suggestive of the edge of the os, and my suspicion that no os had as yet been discovered was strengthened. Still, a definite idea of an occluded os had not even yet dawned upon me; and I was under the impression, besides, that it was a head presentation I had to deal with. After a little more profitless delay, I made up my mind to put the matter to the proof by rupturing the membranes; but they were everywhere so tough that I failed to do so with my finger-nail, which still more reinforced my doubts. I procured a strong steel knitting-needle, punctured the hypothetical membranes during a pain at the softest and likeliest spot I could find, and tried to gently tear them, but to no purpose, for fortunately they would not tear. No amniotic fluid appeared to escape, but on again examining I found my finger stained with meconium. This small puncture threw a flood of light on the case, and I at once perceived that not only had I to deal with a completely occluded os uteri, but also with a breech presentation. There were now no reasons for further delay, the pains being quite strong enough for expulsive purposes. I therefore informed the friends that I would get some assistance, as the case was a rather unusual one, but that there was no danger or any cause whatever for anxiety. I was fortunate in securing at once the help of Dr. Johnston, to whom I communicated the peculiarities of the case. On examination he also found the condition of affairs quite new and puzzling to him, but after some careful and patient digital exploration a faintly depressed spot was discovered, situated pretty far back, high up, and not quite in the median line, which I have found to agree with the description given of most of the cases of this form of occlusion. This was accepted by both of us as a fairly reasonable indication of an os which must at one time have existed; and as the patient had now been in labour over fifteen hours, and as there was not much hope that with the breech presenting uterine action alone would be able to open up a way of escape either for us or the ovum, we agreed to artificially reopen the passage into the uterus. This was satisfactorily accomplished after some difficulty by operating on the spot agreed upon with a uterine sound. The os dilated rapidly and well, assisted by the finger, up to a certain point; but in a short time, when it had attained a diameter of between three and four inches, further stretching became much more difficult and tedious. Notwithstanding, we considered it advisable to hasten delivery; the legs were brought down and the head extracted—not, however, without a vast deal of trouble by Dr. Johnston, who, in the friendliest manner, undertook the major part of this manual labour. The child was evidently dead, for no sign of life was manifested even after prolonged efforts at resuscitation. As the head was being secured at the outlet, the perineum was unfortunately torn pretty deeply; but I inserted at once a couple of deep stitches, and, as the wound healed by first intention, it never gave any further trouble. The placenta was brought away easily. No chloroform had been granted to the patient, who, however, behaved admirably throughout. She was carefully nursed, and douched regularly with sublimate solution; so that she made an excellent recovery, her temperature never having reached 100° except once.

There are two forms of this occlusive dystocia which are met with and described. The one is a true cicatricial atresia or ulcerative adhesion, which may result from the supervention of pregnancy very soon after a previous confinement, from ineffective attempts to procure abortion, from cauterisation of the os during pregnancy, from syphilitic disease, or, in fact, from any cause productive of ulceration. It is quite clear, however, that our present case cannot belong to this category, for there was no trace whatever of any history which could suggest any of these causes, or, indeed, any others; and, besides, it is always easy, according to Spiegelberg, to diagnose this condition by the rough and hard cicatrix which is present, except when the labour has so advanced that the pressure of the ovum has thinned out the uterine wall, and smoothed out even the cicatrix. The other form is that of simple epithelial atresia or agglutination, caused probably by the agglomeration of excessively proliferated epithelium, fibrinous exudation, and inspissated mucous secretion. It may, however, in some cases result from a real superficial adhesive endocervicitis, from some irritation, mechanical or other, insufficient to be appreciable, or considered of no importance, by the pregnant woman herself. We know that the maternal blood, during the latter half of pregnancy at least, becomes largely increased in its fibrin, and that the cervix during the progress of the pregnancy gradually softens from the os upwards, by means of an abundant production of plasma, fibres, and cells. And as in primiparæ (in whom this special form of abnormality is mostly found) the external os remains closed till the beginning of labour, it is conceivable that from some slight unknown cause this plasmic exudation and cell proliferation may be in certain cases increased, and a kind of tough, semi-organised false membrane, as Naegelé terms it, may thus be formed. This appears to me to be the form of obstruction and a probable explanation of its existence in our present case, and how far it may be possible that her rheumatic constitution may have contributed to an increased fibrin formation I cannot venture to assert.

Barnes and Parvin both speak of certain very rare cases where the occlusion is caused by the adhesive union of the chorionic and amniotic membranes with the maternal membrane. In these cases the rim of the os is recognisable, and all that has to be done is to separate the membranes, or, failing that, to rupture the amnion. However this obstetric anomaly may be produced, every authority who alludes to it at all regards it as of rare occurrence. Churchill says "there are cases on record"; Barnes speaks of it as "a condition commonly described, but very rare"; Leishman has it that "there are some cases in which it seems that the os is completely occluded"; Parvin remarks that "conglutination of the external orifice is occasionally met with"; and Spiegelberg says of both forms of occlusion that they are "equally rare." Ramsbotham, in his ponderous and learned volume, takes no notice of it whatever, nor does Denman; nor have I found any mention of it in Simpson's collected writings. Mazzoni mentions having observed an instance of it; and Dr. Campbell, cited by Churchill, relates two cases, both first pregnancies, in one of which uterine action continued twelve hours, and in the other two days and a night, before any trace of an os could be discovered; and Churchill himself had a case which took forty hours to divulge an os, which even then was but the size of a small crow-quill. In a number of the *International Journal of Medical Sciences* of last year a brief record is given of a case published by Jentzer in the *Archives de Tocologie*. He was sent for by a midwife who was attending a woman, aged twenty-two, at full term, and he found a tumour between the patient's thighs, which was the child's head covered with an elongated cervix, almost impervious. There was no history of previous disease or injury to account for it. He says several similar instances are found in the literature of the subject.

The references and descriptions furnished by the few authorities whom I have consulted are mostly brief and imperfect; but Rigby, quoted by Churchill, and Spiegelberg supply adequate enough accounts of this condition and its management. Rigby says: "We may suspect that the protraction of labour arises from agglutinated os uteri when at an early period of it we can discover no vestige of the opening in the globular mass formed by the inferior segment of the uterus, which is forced down deeply into the pelvis, or at any rate when we can only detect a small fold or fossa, or merely a concavity, at the bottom of which is a slight indentation, and which is usually a considerable distance from the median line of the pelvis. The pains come on regularly and powerfully, the lower segment of the uterus is pushed deeper into the cavity of the pelvis, even to its outlet, and becomes so tense as to threaten rupture; at the same time it becomes so thin that a practitioner who sees such a case for the first time would be induced to suppose the head was presenting, merely covered by the membranes. After a time, by the increasing severity of the pains, the os uteri at length opens, or it becomes necessary that this should be effected by art. ..... Although the obstacle is capable of resisting the most powerful efforts of the uterus, a moderate degree of pressure against it, whilst in a state of strong distension, either by the tip of the finger or a female catheter, is quite sufficient to overcome it." Spiegelberg practically corroborates this description: "Only when the parts are greatly expanded, thinned, and smoothed out, are difficulties likely to arise; similarly, when the seat of the orifice is displaced far backwards and cannot easily be reached by the examining finger. Under such circumstances practitioners have repeatedly failed to recognise the stretched lower uterine segment and vaginal fundus, believing the presenting head to be only covered by the fœtal membranes. ..... The os may either not be detected at all, or else it merely presents a shallow groove which is very apt to be overlooked. It is generally spontaneously remedied when the ovum is forced down, but if it detains the latter, it must be ruptured by a finger during a pain, or by the uterine sound."

In this case there is no doubt that the breech presenting, instead of the head, produced a modified state of parts differing somewhat from these descriptions, and not only slightly increased the difficulties of diagnosis, but materially affected the progress of the labour. For the uterine contractions do not bear with the same direct force on the lower segment of the uterus when this is occupied by the breech; and when especially the os was situated somewhat obliquely and out of the normal axis, the expanding power of the pains would to a certain extent be lost, demanding therefore a much longer time for their opening up the womb. It seems to me there is no advantage gained, but the reverse, in waiting for the natural efforts to remove the obstruction, once the diagnosis is made and the labour has made fairly distinct progress. The only dubious point of treatment in the case was whether, after an opening had been made, the labour might not have been better left to nature; but the woman was certainly becoming tired, and a hope was entertained that by expediting delivery the chances of saving the child would be thereby increased.

I would only add, in conclusion, that Mattei, who brought together a careful statistical collection of cases, found that thirty-six operations were necessary among forty-two patients, of whom three died. In twenty-eight cases in which the operation was not done till late, seven children were stillborn, and two of the mothers died.

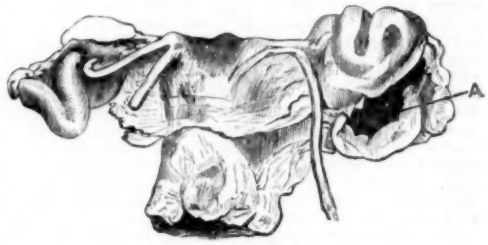
Dundee.

## A CASE OF DOUBLE PYO-SALPINX IN A CHILD ONE YEAR AND NINE MONTHS OLD.

BY A. H. CHEATLE, M.R.C.S., L.R.C.P.,
JUNIOR RESIDENT MEDICAL OFFICER AND REGISTRAR TO THE EVELINA HOSPITAL FOR SICK CHILDREN.

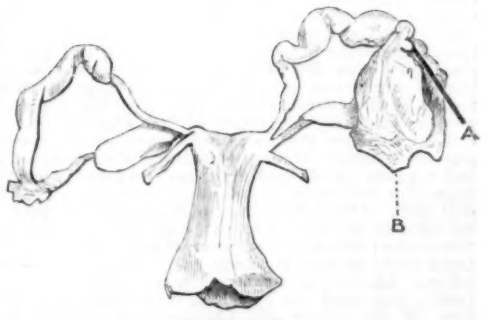
L. B——, aged one year and nine months, was admitted in May last into the Evelina Hospital, under Dr. Frederick Taylor (who kindly allows me to publish the case), with tubercular disease of the right lung. Nothing abnormal was detected in the abdomen beyond some tumidity, the walls being lax and admitting of free examination. No vulvo-vaginitis present. At the post-mortem examination, a large irregular cavity, containing an ounce and a half of thick pus, was found in the superior lobe of the right lung, surrounded by tubercular consolidation. Tubercular deposits were also found scattered through the middle and inferior lobes, in the liver and right kidney. The peritoneum was studded with yellow tubercles, especially in the pelvic region. No ulceration was detected in the small intestine. On removing the sigmoid flexure some thick pus was observed at the left pelvic brim, which was found to be exuding from an abscess in the left broad ligament. The uterus and its appendages were then removed, both Fallopian tubes found to be coiled and distended with pus, the left more so than the right, and apparently in communication with the abscess, the left ovary being completely hidden and the right tube prolapsed when the specimen was looked at from the front, the whole presenting the appearance represented in the first sketch. On dissection, the peritoneum, though somewhat thickened, was fairly easily dissected off. The proximal ends of both tubes were found to be healthy, the right for an inch, the left for a quarter of an inch, the left opening into the abscess and forming its wall, the abscess containing about one drachm of thick pus. The uterus was found to be perfectly healthy. The second sketch represents the specimen after dissection.

FIG. 1.




AS REMOVED.
A, Abscess cavity.

FIG. 2.




AFTER DISSECTION.
A, Probe passed into Fallopian tube. B, Abscess wall laid open.

FUNERAL REFORM AND CREMATION.—Surgeon-General Sir Joseph Fayrer, presiding last week at a meeting of the Funeral Reform Association in the Church House, Westminster, said that on the battlefield and during a pestilence cremation might be necessary, but if the body were buried in a perishable coffin in suitable soil there was no need of cremation. The Hon. George Waldegrave Leslie and General Lowry, C.B., moved resolutions, which were carried unanimously, advocating a return to the ancient practice of burying simply in the plain earth. It was also resolved to urge the transference from the Home Office to the Local Government Board of the control over burial places. Other meetings were held during the week in the Town Halls of Leeds, Manchester, and Colchester, and at Dewsbury.

# A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

**Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.**

## ST. BARTHOLOMEW'S HOSPITAL.

### SARCOMA OF THE UPPER JAW; EXCISION; NO RECURRENCE AFTER FOUR YEARS.

(Under the care of Mr. MORRANT BAKER.)

THE great interest in this case lies in the fact that, although the patient has passed the three years' limit, before which no case can be regarded as even comparatively safe from recurrence of malignant disease, no matter how carefully it has been removed, there is no evidence of return of the growth. It is the more important to place such on record, although we are without any definite idea as to the minute structure of the tumour, because the result of operations for carcinoma as well as sarcoma of the superior maxilla is so unsatisfactory. "Out of sixty-four cases of which the result is recorded, only four can be regarded (from the three-year limit) as successful, and in one of them the disease reappeared at the end of nine years. The prospect of surgical treatment is very gloomy."[1] The history of this case resembles somewhat that of one successfully treated by Ohlemann,[2] a slowly growing tumour of the alveolar border of the jaw. For the account of this case we are indebted to Mr. Arnold Lyndon, late house surgeon.

G. H. A——, aged thirty-six, a marine engineer, was admitted into St. Bartholomew's Hospital on Sept. 19th, 1887. The patient gave the following history: Twelve years ago he had a bad cold in his head, and on rising one morning found that his left nostril was "stopped up," and that he could not breathe freely through it. The obstruction in the left nostril has continued up to the present time; otherwise the patient has enjoyed perfect health until six months ago, when he noticed that the upper molar teeth of the left side were loose, and seemed to be pushed out of their sockets, so that he could not bite comfortably. About this time also a swelling appeared in the roof of the mouth on the same side. The swelling in the mouth has been rapidly increasing the last few months, and lately the patient has been troubled by tears running down the left cheek.

*Present condition.*—Patient is a healthy looking and powerfully built man. The left cheek is obviously fuller than the right, and the left half of the nose is broadened and bulged outwards, and tears are constantly trickling down the cheek. The left eyeball is not pushed upwards or forwards, and its movements are free and natural, but the patient complains of slight dimness of vision on that side. On closer examination, a hard, rounded swelling can be felt in the left cheek below the orbit, and on examination with a speculum a fleshy-looking growth is found to occlude the passage of the left nostril. There are no enlarged glands in the submaxillary region. Inside the mouth an oval swelling is seen projecting from the hard palate on the left side. The swelling is elastic, red, and velvety in appearance, and everywhere covered by the mucous membrane of the mouth. It begins in front opposite the first bicuspid tooth and extends backwards to the soft palate, while laterally it is bounded externally by the alveolus of the jaw, and internally it reaches nearly to the middle line of the palate. The upper molar teeth on the same side are very loose and pushed downwards, so that the greater part of the fangs are exposed.

No doubt being entertained of the nature of the growth, Mr. Baker advised the patient to submit to operation, but as the growth did not appear to involve the orbit Mr. Baker determined to do a partial excision of the upper jaw, leaving the floor of the orbit intact. On Sept. 21st, the patient being under the influence of chloroform, a gag was inserted into the mouth, and Mr. Baker punctured the swelling in the roof of the mouth with a narrow-bladed knife. The knife passed through the growth right up into the antrum, and the puncture bled freely. The gag was then removed, and the operation for partial excision of the upper jaw by the external-flap method was carried out in the usual way. The bone was found to be very soft and friable, and crumbled away when seized with the lion forceps. Much of the growth came away with the bone, and what remained was cut away piecemeal with scissors. The whole of the antrum and nostril were found to be filled with a very soft and vascular growth, presenting all the characteristics of a rapidly growing sarcoma, but the floor of the orbit was not involved. There was very free hæmorrhage during the operation, and many vessels were secured and ligatured, but as a general oozing still continued at the deeper parts of the wound, Paquelin's cautery was applied. The parts were then irrigated with carbolic lotion, and the skin flap secured with silver wire and horsehair sutures, and dry gauze dressings applied.

Nothing noteworthy occurred the next few days; the skin wound was dressed on the third day, and was found to have united by the first intention, so most of the sutures were removed, and two days later the remaining ones also. On the evening of Sept. 27th (six days after the operation) secondary hæmorrhage came on from the wound in the mouth after a fit of coughing, and was only stopped with great difficulty and after the patient had lost a large quantity of blood. From this time he made an uninterrupted recovery, and on Oct. 7th was sent to the Convalescent Home at Swanley.

On Nov. 11th, seven weeks after operation, the patient returned from Swanley, and it was then found that at the bottom cavity left in the mouth by the operation there was a raised patch the size of a shilling, soft and vascular, and the surface ragged and ulcerated. This was watched for a few days, and as it appeared to be growing it was determined to destroy it with chloride of zinc. In the first instance a paste composed of one ounce of chloride of zinc, two drachms of flour, and one ounce of liquor opii sedativus was employed. This was powerfully escharotic, but gave the patient great pain, and was not easy of application, so the following formula, suggested by Mr. Thomas Smith, was substituted: 100 grains of chloride of zinc, and one ounce of flexible collodion (half strength). This was applied daily with a camel's-hair brush, caused very little pain, and acted very efficiently. By the middle of December the growth was quite destroyed, and a healthy surface left. On Dec. 23rd the man left the hospital, provided with a diaphragm and a set of artificial teeth. The rapid return of the disease pointed to the probability of a small portion of the growth having escaped removal at the time of operation, and not to a recurrence in the true sense of the word. Still, when the patient left the hospital, Mr. Baker gave a very bad prognosis, and said that it would probably recur before long. From this time nothing was heard of the patient till September, 1888 (one year after operation), when he wrote to say that he was perfectly well, and that there was no return of the disease. In September, 1889, 1890, and 1891 patient again wrote, repeating what he said in his first letter, that he was quite well. In his last letter, Sept. 21st, 1891, he says: "I still continue in good health, and my mouth gives me no trouble."

*Remarks by* Mr. LYNDON.—The interest of this case lies in the fact that four years after excision of the upper jaw for rapidly growing sarcoma the patient is in perfect health, and there is no recurrence of the disease. At the time of operation a portion of the growth was set aside for microscopical examination, but unfortunately was mislaid, so that the diagnosis could not be confirmed microscopically. That the disease was malignant I think there can be no doubt. Its rapid growth in the six months before operation, its growth outwards to the cheek, downwards through the hard palate to the mouth, the invasion of the sockets of the teeth, and its rapid reappearance directly after the operation, together with its extremely vascular and soft and friable nature, point conclusively to malignant disease.

[1] The Operative Treatment of Malignant Disease.
[2] Ibid., Butlin, p. 133.

## NORTH RIDING INFIRMARY, MIDDLESBROUGH.

### A CASE OF FRACTURE OF THE PELVIS COMPLICATED WITH COMPLETE DIVISION OF THE URETHRA; RECOVERY.

(Under the care of Dr. WILLIAMS.)

FRACTURE of the pelvis, complicated with rupture of the urethra, is one of the most severe of all the various

accidents which a surgeon is called upon to treat. The injury is followed by great shock, and the condition of the patient is such as to cause much anxiety from the time he first comes under observation until he leaves the hospital. Indeed, the surgeon's anxiety does not end there, for the serious traumatic stricture, which is an inevitable result of the laceration of the urethra, requires great perseverance in its after management, the continual and almost unconquerable tendency to contraction of the stricture rendering the frequent use of catheters a necessity. This is a good example of the result of treatment of such a case, for the account of which we are indebted to Mr. G. Victor Miller, the resident surgeon.

J. M——, aged eighteen, a fireman on a locomotive, was admitted into the North Riding Infirmary on April 13th, 1891, suffering from fracture of the pelvis due to his having been crushed between a wall and a locomotive. The patient had all the symptoms of fracture, involving the pubic arch, together with much shock, which usually accompanies this severe injury. A soft catheter was introduced into the urethra, and a little urine followed by a quantity of dark blood came away. This instrument was tied in position. In four or five hours the bladder began to distend above the pubes, and the patient to complain of pain in the hypogastric region. As blood was still coming from the catheter, it was evident the instrument was not in the bladder, and that the urine which came away previously was a small quantity that had escaped into the tissues when the patient received the injury. The patient was now suffering from retention. To relieve this the soft instrument was withdrawn, and an attempt made to pass a silver instrument. The attempt was unsuccessful, and the next resort was aspiration above the pubes. This was done, and urine came away perfectly clear. Aspiration at intervals was carried on for two days, and then another attempt made to pass an instrument, but without success. Of course, it will be understood that even if the patient could have passed urine, he was warned not to do so, to prevent extravasation into the tissues.

It was now decided to cut down on to the membranous urethra from the perineum. This was done at once, and the urethra in this part was found wanting and a mass of blood-clot in its place. A search was made for the torn ends, which were found, a catheter being passed through the central end into the bladder. Any attempt to bring the ends together would probably have proved useless, owing to the laceration and distance between them; so none was made. The catheter was withdrawn and a large drainage-tube put in the wound to carry the urine directly away. This went on about three weeks, all urine coming freely away through the perineal wound. With the finger in the wound the central torn end of the urethra could be easily felt (it conveyed to the finger much the same impression that the female urethral orifice does) and the soft catheter directed into it. An attempt was now made to pass a silver instrument from the external meatus, and with success. This was kept in for two days and then replaced by an ordinary English gum-elastic catheter, which was changed every day. After passing the first instrument there was little difficulty in passing the others, apparently from the central end being quite rid of the surrounding clot, and also because of its being quite patent and fixed. To pass the instrument one required a good curve to it, to elbow the point a little, and depress well between the thighs. On one or two occasions only was it found necessary to put the finger into the wound and tilt up the point. One might judge from this that the distended bladder dragged up the urethra a little, but there was no deviation laterally. With the finger in the perineal wound, the bare catheter to the extent of over an inch and a quarter could be felt between the ends of the urethra. This state of affairs went on for about a month, the gap in the urethra slowly but gradually closing up. The tube was removed from the perineal wound and allowed to close up, all the urine passing through the catheter. The patient was now taught to draw off the urine himself during the day, an instrument—No. 10, 11, or 12, gum-elastic—being tied in over night. This was required on account of his being able to retain urine only about three hours, and also to keep what would probably prove to be a very bad traumatic stricture well dilated. The instrument was not put in at night, when he could retain urine for five or six hours. As the patient was now up and going about, drawing off all the urine himself when necessary, and the perineal wound was closed, it was thought he might be allowed to pass urine without an instrument; and this he did for the first time, quite freely and without pain or discomfort, on July 12th. He left the hospital on July 31st quite recovered.

The only complication of any note during the progress of the case was a urethral abscess about two inches and a half from the external meatus, which sent up the patient's temperature. It burst into the urethra, but was afterwards opened and allowed to discharge externally. A sinus remained for some time, but ultimately closed up completely. He has since been seen and examined. He states that he has been at work for the last six weeks, and feels as well as ever he did before the accident. His only trouble is the stricture, and for this he requires to pass a No 10 English gum-elastic catheter every other or every third day. He has not much difficulty in passing the instrument into the bladder, but the stricture contracts very soon after dilatation, which will be readily understood from the severe nature of the injury to the urethra.

# Medical Societies.

## ROYAL MEDICAL & CHIRURGICAL SOCIETY.

*Actinomycosis of the Vermiform Appendix, of the Digestive and Urinary Tracts, and of the Face and Neck.*

AN ordinary meeting of this Society was held on Nov. 10th, Dr. Langdon Down, Vice-President, in the chair.

Dr. W. H. RANSOM communicated a case of Actinomycosis of the Vermiform Appendix causing Perityphlitis. The patient, aged fifty, was an active, healthy man, with no noteworthy previous medical history. He began about Oct. 12th, 1888, to have indefinite abdominal pains, and on the 21st had sudden severe pain in the right iliac fossa, increased on exertion, so that he was laid up. At this date deep palpation revealed a considerable solid mass in the region of the cæcum, very tender to pressure. On Dec 5th there was evidence of thrombosis of the right external iliac vein. On the 9th the region behind the cæcum was explored by an aspirating needle without result. On Jan. 4th, 1889, the swelling of the right leg diminished, but returned on Jan. 10th. On Feb. 19th a point appeared in front of the anterior superior spine of the ilium, and two days later it burst and discharged a little dirty, offensive pus. The opening was enlarged and an ounce of fæcal-smelling pus let out. A drainage-tube was inserted. On Feb. 28th, under anæsthetics, a probe was passed and cut down upon in the loin, from which aperture a drainage-tube was inserted five inches and a half in the direction of the cæcum. A similar tube was passed connecting the anterior and posterior apertures. From this escaped fetid and fæcal-smelling pus, some gas, a few flakes of fibrinous clot, and some soft masses of granulation tissue, which were not found to contain any neoplasm or other contents which tended to clear up the diagnosis. The discharges contained specks of fæcal matter. March 20th: A small point appeared between the two previous apertures, and was opened, but only a small amount of pus escaped, having the same character. No relief followed. On April 13th a free incision was made, the sinuses were freely explored with the finger, and a large drainage-tube inserted. Very little pus escaped during or after this operation. Some two or three days later there was fetid pus in the discharges, and this contained, besides fæcal specks, spherules or colonies of actinomyces. This operation gave no relief. An infective vesicular skin eruption appeared near the apertures, some little diarrhœa came on, and the whole condition became worse. He died on June 21st. He was ill in all eight months, and febrile, with few and brief interruptions, for the last seven months. There was no appearance during life of any other visceral complication. There was evidence that the thrombus of the right external iliac vein had gradually spread centripetally, and in less than four months had reached the vena cava. Necropsy: Nothing noticed of importance except in the abdomen. Liver too large, soft, greasy to touch, contained a metastatic focus as large as a doubled fist. There were no indications of general peritonitis. The vermiform appendix was tortuous, bound down by adhesions. Behind the cæcum was found an abscess with irregular walls and numerous communicating channels continuous

with the apertures in the skin, extending inwards to the sides of the vertebræ, upwards nearly to the kidney, and downwards nearly to Poupart's ligament. Near the vermiform appendix the right common and external iliac veins were involved in the scar tissue. The vena cava and the common iliac vein of the left side with its affluents were blocked with more recent coagulum. The cæcum seen from within had a fairly normal mucous lining, and did not communicate with the cavity of the abscess. The appendix was much deformed and twisted, its communication with the cæcum patent, the proximal part dilated and its inner surface irregularly eroded, with two or three perforations leading into the abscess. A few spherules of actinomyces were found in the washings of these parts, but none were seen *in situ*. The spherules were also found in the soft contents of the metastatic focus in the liver, and by the author's son, Dr. W. B. Ransom, who used the paraffin method in the walls of the focus *in situ*. No spherules were found *in situ* in sections of the indurated walls of the abscess, or in the venous thrombus, or in the granulation tissue squeezed out during the operations. The author remarked that the diagnosis first made was shown to be in part only correct. It gave a wrong explanation of the morbid process in the vermiform appendix which led to its perforation and to the consequent abscess behind the cæcum. He suggested that the discharges should have been examined and the true diagnosis established two months earlier. The general clinical characters of actinomycosis did not appear to be sufficiently distinctive to allow of a positive diagnosis from them alone, even in superficial affections, although they were such as might suggest the proper line for investigation. The author would in future be induced to search for the spherules in the discharges whenever he met with a subacute or chronic inflammation spreading in all tissues and viscera without marked preference for any, but in the main downwards, feeling hard or even woody to the touch, involving the skin and softening in the centre slowly, yielding pus at length, but in scanty proportions in relation to the swelling, and not healing readily when freely opened and drained. He assumed that this patient swallowed a fragment or a whole grain of some corn or grass (probably barley) which was infected by the actinomyces, and that this lodged in the vermiform appendix. There the ray fungus developed, and, setting up a destructive inflammatory process, surrounded by a zone of protective reaction, gave rise at once to a perforation of the appendix and to a limitation of the resulting abscess behind the cæcum, which saved the peritoneal cavity, but, by including in its outer zone the right iliac veins, gave rise to the thromboses. The author thought the case could not have been treated successfully by operation for removal of the vermiform appendix or otherwise.

Dr. W. B. RANSOM related the history of a case of Actinomycosis of the Digestive and Urinary Tracts. A man, aged forty-eight, began in September, 1890, to suffer from colic, flatus, occasional vomiting, and irregular action of the bowels. He first came under observation at the end of January, 1891, by which time he had lost two stones in weight. There had been no urinary symptoms except slight frequency of micturition, and rarely a little scalding during the act. He then (January) showed tympanitic distension of the intestines, and the urine contained a few spherules of actinomyces. A resistant, tender mass was felt in front of the rectum above the prostate. A stool passed shortly after contained a little blood and slime and a few spherules of the fungus. After admission into the General Hospital, Nottingham, he continued to pass the spherules in the urine, but no more were found in the stools, though tympanites and tendency to diarrhœa continued. It was thought probable that the mass above the prostate was an actinomycotic growth, and on March 3rd Dr. H. Owen Taylor performed laparotomy. It was then found that the mass was really a coil of small gut bound down by adhesions, and no growth was visible. The patient made a good recovery from the operation, and when treated with β-naphthol and calomel soon lost his abdominal distension and gained strength and weight. He still passed a few spherules in the urine, which was otherwise normal, but he was free from urinary or intestinal symptoms. At the operation the bladder appeared normal. Urine drawn off by a catheter on several occasions had not contained spherules. The prostate was probably the seat of the disease, though it was normal to the touch. The patient had gone home in good general health, and was under observation. The case was of etiological interest from the fact of the patient having in July, 1890, eaten fresh ears of barley and wheat.

Mr. A. R. ANDERSON contributed notes of a case of Actinomycosis of the Face and Neck in which operative treatment produced a cure. The illness of the patient, a man aged twenty-nine, began twelve weeks before admission, with a painless swelling over the left horizontal ramus of the lower jaw near the angle. Thence it gradually spread towards the eye and down into the neck. Six weeks from the beginning, pus was formed over the angle of the jaw and evacuated. Another abscess formed and was opened. On admission, the left side of the face was much swollen, and there were eight openings discharging pus. Bare bone could be felt at the bottom of every sinus over the face. The skin was reddened and infiltrated around. The teeth were carious on the left side in both jaws. The pus from the openings contained the pale-yellow granules characteristic of actinomycosis. A week after admission an incision was made along the lower ramus of the jaw to the angle, thence upwards to the zygoma, and inwards along the lower margin of the orbit. The flap of skin was dissected towards the middle line. A quantity of fungating tissue was scraped away thoroughly, and portions of the upper and lower jaws and malar bone were similarly treated. Diseased tissue was also scraped out from beneath the malar bone, and much of the masseter muscle was cut away. The neck was similarly treated by incision and scraping. Three days later no fungus spherules could be found in the pus. The patient made an uninterrupted recovery. The author thought that the surrounding indurated skin contained but little of the fungus; it was only after repeated microscopic examination that some was at length found.

Dr. PYE-SMITH said he had seen the first case, in which there was a focus of irritation in the vermiform appendix, leading to suppuration behind the cæcum. It was only possible to arrive at a complete and exact diagnosis on the recognition of the real cause of the suppuration—viz., the spherules of the actinomyces. It was exactly like the organism found in cattle, and it could be recognised without the necessity of any microscopical examination—even by the naked eye—which was an important point. He thought the case was probably hopeless from the beginning, and he would not express any regret that more severe measures had not been taken for its relief: any such would probably have hastened the fatal result. It was undoubtedly not a new disease, but only an old disease which had heretofore been unrecognised. The other day, in looking out a preparation to illustrate this point in a lecture, he found in the museum at Guy's Hospital an old preparation of abscess of the liver which was certainly a case of actinomycosis. Its prevalence appeared to be closely associated with barley. He observed that the second case would warrant a more hopeful diagnosis than they had hitherto ventured to give. He thought the third case reflected the greatest credit upon the courage and skill of the operator. In all the cases he had met with he had known it to play only the part of a local irritant, and never to infect the blood and tissues at a distance like other infective agencies of the kind. He thought it might be compared in its action very much to the charbon bacillus. Sometimes this affected the form of pustules which could be removed, and sometimes it took on an intestinal and pulmonary form which could not be dealt with and so proved fatal.

Professor CROOKSHANK said the three cases were of the greatest possible interest. He had remarked more particularly Mr. Anderson's case because it was the first surgical case of actinomycosis which had been brought forward in this country. Similar cases had been placed on record in Germany and in the United States. Moreover, this case was peculiarly interesting in that the lesions were those which were commonly met with in cattle. It corresponded with what veterinary surgeons described as osteo-sarcoma or osteo fibrosis. This form, as affecting the jaw, was also very prevalent in the United States and Australia, where it was known to breeders under the name of "lumpy jaw." With regard to the recognition of the organism, he had long insisted upon the necessity for making a naked-eye examination of the secretions, and on the facility with which it could be recognised without microscopical examination. The easiest way was to allow a little of the pus to trickle down the side of a test-tube and hold the tube up to the light, when the spherules were readily to be identified.

The morphology of the fungus was still an open question. He was inclined to think that to regard it as a bacillus was a retrograde step. It really occupied a halfway position between bacilli and schizomycetes. Certainly artificial cultivations seemed to bear out this view. He observed that at the Congress of Hygiene opinions were practically unanimous as to the non-transmissibility of the disease from cow to cow or from man to man. The view generally entertained was that man and animal took the infection from a common source, probably from one or other of the cereals.

Dr. HILL said that similar club-like cells with the spores coming from them could be obtained from the mushroom. If it were a fission fungus it would be very unlikely for one to see such large groups in the urine. Moreover, its mode of reproduction suggested that it was one of the higher fungi.

Dr. TAYLOR, as to the transmission of the fungus from one part to another, mentioned a case of actinomycosis of the liver which presented as a tumour in the right flank. It was only six weeks after his illness had begun that he first saw the patient, and he was then obviously suffering from deep-seated suppuration. There was a painful swelling under the right ribs, which did not descend freely with respiration, yet its outline was strongly suggestive of a renal or hepatic tumour. The urine, on the other hand, was perfectly normal. After some few days the tumour became larger and plainly fluctuating, and an operation was performed. One abscess was opened, and subsequently another, and the finger passed into a rugged cavity which gave the impression of being the kidney. The patient died, and at the post-mortem examination it was found that there was a cavity communicating with and lying behind the liver, being bounded by the colon and by adhesions on every side. The abscess cavity was partly inside and partly outside the liver substance. Typical granules were then discovered, though their presence had not been recognised before death. There were found to be sinuses in connexion both with the duodenum and the cæcum, which it might be supposed was the seat of origin of the disease. The lungs were also found to contain small granular masses like tubercle, but presenting the characteristic appearances upon closer examination. With regard to the question of morphology, the matter had been placed in the hands of his colleagues, who so far were not ready to publish the results of their investigations.

Dr. SEPTIMUS GIBBON said he had noticed a good deal of the disease in animals, especially in the dead. He thought he had remarked a tendency to prevalence during damp seasons—1877 and 1880, for example. The most common lesions were those in the jaw. He mentioned that it was a common notion among farmers and butchers that the disease was produced in damp climates. A good many of the animals in which he had found the disease were from Cambridgeshire. He observed that the meat of these animals was largely consumed in London, yet he had never heard of a case in which the disease had been thus transmitted.

Mr. CHARTERS SYMONS said that previously to seeing Dr. Ransom's case he had had two examples of similar swellings in the right iliac fossa. In one, of eighteen months' duration, it finally broke, and turned out to be epithelioma of the cæcum. In the second case he was asked to divide the sartorius muscle to allow of the extension of a limb which had become fixed in flexion. He found, however, that there was a marked swelling underneath the muscle which accounted for the flexion. The symptoms had existed for a year, and the whole iliac fossa became filled with a growth. This, too, turned out to be a case of epithelioma, and when he was asked to see the third case, he took the view that it was another of the same kind. When they operated they were careful to remove and scrape away parts of the wall in order to discover any growth; but, in spite of the most careful examination, he had been unable to discover anything at all peculiar or characteristic. That was borne out by the fact that after death no growth could be found in the wall. He agreed that even in the early stage of this case nothing could have been done to remove the disease without making a very large opening into the cæcum, which could not have been closed.

Dr. RANSOM, in reply, desired to emphasise a point in the etiology. Up to the last year or two almost everyone accepted the notion that this disease, which was undoubtedly locally infectious in the sense of spreading from point to point, and in certain cases by metastasis, was introduced into the body by eating the flesh of animals suffering from the disease. That doctrine had at any rate now been definitely abandoned. In each of three cases examined by serial sections by a continental observer a fragment of barley was found at the bottom of the growth. The same physician had spoken of having examined the separate or isolated growths occurring upon cattle, which had all the appearance of having been separately infected—that was to say, one had not given rise to the other. In each of these he had found a fragment of corn. He thought that these facts went a very long way to prove that human beings derived the malady from the same source as cattle, and not from the cattle flesh.

Dr. W. B RANSOM, in reply, said he had endeavoured to ascertain whether damp seasons had any influence in bringing about the prevalence of the disease, but the result of his inquiries had been purely negative. With regard to its connexion with cereals, he mentioned that in Germany 77 per cent. of the cases of actinomycosis occurred between the months of August and January, and only the remaining 23 per cent. between the months of January and July, so that the period following the harvest was evidently more prolific in cases of this disease. He was not aware that anyone had actually considered the actinomyces to be a bacillus, but there was a very great distance between the leptothrix and the higher fungi. It had been successfully cultivated on glycerine, agar-agar, and milk. They had taken the spherules with typical clubs, and had obtained typical growths which they had injected into rabbits, and got the clubs again.

Mr. ANDERSON, in reply, said he was not aware until Dr. Crookshank had spoken that his was the first recorded successful surgical case of actinomycosis, though he had been unable to find anything in the literature of the subject. The chief point of interest was the extremely unpromising aspect which the case presented. For a wide area round the fungating masses the skin had the brawny appearance seen in the worst forms of cancerous disease; and what made him hesitate to operate was the fact that if this skin was infected, and it should be found necessary, in order to complete the operation, to remove it, the operation would be impossible to carry through. The infiltrated skin was about a quarter of an inch in thickness, and cut like soft leather. It was an interesting feature of the case that although he had left a large area of skin apparently infected, yet recovery had taken place. He thought the result in this case should act as a distinct encouragement to operators to undertake operations in future in which it might not be possible to remove all the diseased structures.

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## MEDICAL SOCIETY OF LONDON.

*The Conditions of Cure in Consumption.*

AN ordinary meeting of this Society was held on Nov. 9th, the President, Dr. Douglas Powell, in the chair.

Dr. BURNEY YEO read a paper on the Conditions of Cure in Consumption. He reminded his readers that it was just a year since the method of treatment by Professor Koch had been promulgated. While, on the one hand, it was admitted that consumption was curable, yet clinically it was undoubtedly a fatal disease. How was the fact to be accounted for, that while few physicians could point to cases of undoubted cure, yet pathologists could exhibit many specimens of obsolescent tubercle in the lungs? The probability was that many of the cases seen post mortem of healed lesions had no symptoms or clinical history. These cases, he thought, should be referred to as cases of cured pulmonary tuberculosis rather than as cases of cured phthisis. Drs. Coates, Fowler, and Martin had recently described these obsolescent lesions, which consisted of fibrous and calcified tubercle, and contained usually no bacilli. Dr. Brouardel of Paris had stated that he had found evidence of cured tubercle in the bodies of 60 per cent. of those people over thirty who had died from violence, and yet Dr. Grancher of the same faculty had said that we were powerless to cure the tuberculous who had become phthisical. The reason of this apparent discrepancy was probably that the cases in which spontaneous cure of tubercle had taken place had never been phthisical in the clinical sense of the term. The frequency with which arrested tubercle was found post mortem in people dying of other diseases had been

variously estimated at from 60 per cent. to as low as 4 per cent. He thought that those cases only should be called phthisis in which there was pulmonary tuberculosis seriously affecting the general health and giving rise to physical signs. In order to effect a cure in phthisis the conditions of cure must exist. They were briefly these:—1. Early recognition of the disease, especially in its first, occult, or germinating stage, which included the period from the advent of the first bacillus up to the development of the adult miliary granulation. This, so far as the lung was concerned, was a silent stage, and was characterised by anæmia, debility, slight cough, and quickened respiration. Bacilli could not be at this time demonstrated, for their presence required the existence of a small cavity communicating with a bronchus. For diagnosis it was necessary to look for localised slight anomalies of respiration, accompanied by a disturbance of the general health. 2. The early occurrence of hæmoptysis was favourable to the cure of phthisis, because it directed early attention to the pulmonary condition. 3. A natural tendency to a fibrous rather than a caseous metamorphosis of the exuded products. 4. Absence of excessive tissue sensitiveness or irritability. Individuals with unstable vascular systems, who flushed readily, offered but feeble resistance to bacillary invasion, and in them the constitutional reaction was very marked. 5. The absence of hereditary taint. 6. The introduction of a small number of bacilli, or of bacilli of low energy or of mitigated virulence. 7. The channel by which the bacilli were introduced was of importance; if they gained admittance by the respired air, it was more favourable than if they were introduced through the blood stream or by way of the lymph vessels. 8. A sound organic state of the patient. A few therapeutic conditions were also worthy of consideration. The patient should be fed with suitable food, in such quantities as to secure assimilation and digestion. In France excessive feeding had been largely carried out, as they held that, in order to obtain cicatrisation, hyper-nutrition was necessary, and this latter was only to be obtained by hyper-alimentation. He quoted a case to show how cure was brought about by a method similar to that of the Weir-Mitchell treatment. The patient should live in the open country or by the sea, in the sunshine, or in a dry, aseptic, unirritating atmosphere, which need not necessarily be cold. He thought that most of the sanatoria in the Swiss Alps were very imperfect ideals for the treatment of the general run of consumptive cases, for their atmosphere was not always unirritating, and attacks of acute bronchitis, pneumonia, and pleurisy were common. He had seen better results produced by South Africa and South California, while the Canaries or Madeira were good for advanced cases. Very early cases, or advanced cases with vigorous organisms, did well in Switzerland. A minute attention to the details of daily life and hygiene was necessary, and repeated counter-irritation he regarded also as of value. As to chemical and pharmaceutical measures he had not much to say; the tissues of one individual reacted so differently from those of another, and drugs had been applied under so many different conditions in consumption. He had often used hypophosphite of lime, which was good in children and young people and in the fair and florid; it did not agree with the dark and sallow, who, indeed, responded indifferently to any form of treatment. He had seen excellent results in some cases in which sulphuretted hydrogen had been introduced into the large intestine. From the use of tuberculin he had also seen good results; indeed, he had had only one failure, and that was in a dark, swarthy subject. Speaking of tuberculin, he said that though the manner in which it had been introduced to the profession was deplorable, yet it would have been more creditable if less feeling had been shown in its denunciation. Antiseptic inhalations did good if persevered in. He had also great faith in creasote and guaiacol given internally, especially if administered in large doses by the bowel.

The PRESIDENT said that every pathologist must have seen evidences of extinct tubercular disease, and these extinct lesions often broke out again many years later after catarrh or congestion; the bacilli apparently then found an opportunity of again developing in the increased quantity of plasma produced by the congestion. We had no ready means of proving the presence of spores in extinct lesions, but this could be ascertained by injection into animals. The great condition necessary for cure was a limited lesion. He thought that the division which the author had made between tuberculosis and phthisis was purely arbitrary; it was merely one of degree. Given a certain extent of phthisis, the question of cure depended upon whether the patient could pass through the necessary stage of elimination of caseous material. The efficacy of the treatment by tuberculin depended upon the fact that it hastened the eliminative process; it was undoubtedly a two-edged weapon, and we required more experience before we could with propriety use it in any considerable number of cases. He quoted a case in which advanced phthisis was arrested under the Weir-Mitchell treatment. Creasote and guaiacol were useful remedies, but they required decided pushing.

Dr. DE HAVILLAND HALL emphasised the necessity of adapting the details of treatment to the needs of each individual patient, and he quoted a case illustrative of this. Change of residence and energetic counter-irritation were useful, and great benefit followed the inhalation of creasote. He had found the resin of copaiba in capsule of value in diminishing cough and expectoration.

Dr. LITTLE had found great difficulty in treating poor out-patients hygienically. In one instance he successfully combated the pyrexia of acute phthisis with antipyrin.

Dr. BENHAM asked for experience of the curative value of waters containing sulphuretted hydrogen.

Dr. C. D. F. PHILLIPS had found that patients in the last stage of phthisis were not benefited by Madeira; no island for its size had so much phthisis among its inhabitants. He thought too much had been said in praise of creasote, which, however, might be of great value where there was a gangrenous tendency.

Dr. YEO, in reply, said that the distinction he drew between tuberculosis and phthisis was merely a clinical one. He agreed that the effect of tuberculin was to hasten elimination. He thought that nearly all the therapeutic remedies he had mentioned acted by diminishing irritability of tissue. The French rarely resorted to forced feeding with the pump now, but they largely used a preparation of beefsteak in powder. Cases of phthisis treated in bad surroundings presented one constantly with surprises. In the Pyrenees were two health resorts with sulphuretted hydrogen waters, which were claimed to produce much benefit in cases of phthisis. He quoted the case of a patient with advanced phthisis whose life had been prolonged for six years by residence in Madeira, which was much more popular than it was ten years ago. He repeated that he had seen better results from creasote than from any other remedy; it improved the appetite, diminished catarrh of the lung, and he thought it favoured sclerotic changes.

## OBSTETRICAL SOCIETY OF LONDON.

A MEETING of this Society was held on Wednesday, Nov. 4th, Dr. Watt Black, President, in the chair.

### *Chorea Gravidarum.*

A paper on this subject, by Dr. F. J. MCCANN, was read. Details of six cases of chorea gravidarum and an account of the modifications of the disease during pregnancy were given by the author. The disease was subdivided into three different forms: (1) true chorea gravidarum; (2) hysterical chorea gravidarum; (3) a mixed form. The symptoms of true chorea gravidarum were given in full, special attention being paid to the influence of quickening, of the fœtal movements, and of peripheral stimuli, including the influence of suckling. Chorea seldom occurs between eighteen and thirty, except during pregnancy. It is commonest during a first pregnancy, true chorea seldom if ever, occurring for the first time during a second or subsequent pregnancy unless there has been some cause in the interval, such as rheumatic fever, to account for the supervention of the attack. In the majority of the cases the disease begins during the third or fourth month. Most important is a previous attack of chorea, of rheumatic fever, or a distinct hereditary rheumatic history. Epilepsy and other disorders of the nervous system may be mentioned, together with fright, mental emotion, and anæmia. For the production of chorea three factors are necessary: (1) a hereditary predisposition to nervous excitability; (2) a blood change or "blood state"; (3) exciting causes. During pregnancy a change exists in the nervous system and in the blood, which favours the action of the factors previously mentioned; in addition, the irritation caused by the fœtal movements plays a minor part in aggravating the

disease. In severe cases the motor cortex, the intellectual centres, and the spinal cord are involved, the last being a secondary affection; in slight cases the motor cortex only. The duration of pregnancy in the absence of complications depends entirely on the severity of the disease; if severe, it is very apt to lead to abortion or premature labour; in slight cases pregnancy progresses favourably. In the majority of cases the mother recovers; in others death, mania (which may persist), delirium, or paralysis may ensue. The result to the child depends on the duration of pregnancy; if delivery at term occur, the risk to the child is not greater than in a normal labour. It was shown that, although after delivery the choreic movements diminish in intensity, in none of the cases observed by the author did they cease entirely, and in one case they continued for five months after labour. In cases where chorea has occurred in childhood a recurrence is almost certain to take place during pregnancy. Chorea gravidarum appears to resemble ordinary chorea in that relapses may or may not be more severe than the first attack. If chorea has occurred during childhood it is more apt to appear in successive pregnancies, and the younger the patient is during the first pregnancy the greater the liability to recurrence. The relation of chorea to menstruation was discussed. Cases of so-called post-puerperal chorea were described and commented upon, and the diagnosis, prognosis, and treatment were given in detail.

Dr. HERMAN saw no reason for attributing chorea to a blood change. One-sided phenomena like those of chorea must be due to change in one side of the brain. There might be some blood change in chorea, but, if so, nothing was known about it. He found it difficult to accept the author's assertion that "in cases where chorea has occurred in childhood a recurrence is almost certain to take place in pregnancy." He thought the great thing in treatment was food; and the best sedative, alcohol.

Dr. PLAYFAIR thought the subdivisions were not the author's, but were taken from a book. He did not think they were clinical. A choreic patient, who was essentially a neurotic, might show certain symptoms which might fairly be described as hysteric, but that did not justify us in calling the complaint "hysterical chorea." He objected also to the term "maniacal chorea" being applied to puerperal choreic patients in whom insanity had shown itself.

Dr. HORROCKS said the chief guide in prognosis was the temperature. So long as the temperature remained normal it mattered little how severe the chorea might be, but as soon as pyrexia began there was danger. He asked if observations had been made on the temperature.

Dr. CHAMPNEYS said that in a disease like chorea, in which the affection was partly mental, it was impossible to say where chorea ended and insanity began. He should prefer the term "maniacal chorea" used by the author to that proposed by Dr. Playfair, "chorea and mania."

Dr. MCCANN, in reply, thanked the Fellows of the Society. He stated that chorea was not entirely a blood disease. Several factors must be considered in explanation of this disease. As to recurrence during pregnancy, he pointed out that many of the slight cases might be overlooked. Authorities were agreed that a form known as hysterical chorea could be differentiated from the true disease, and that mania, developing as a consequence of a severe attack of chorea gravidarum, was quite distinct from the ordinary puerperal mania.

The following specimens were shown:—

Dr. CULLINGWORTH: (1) Sarcoma of Ovary; (2) Suppurating Ovarian Cyst; (3) Seven Cases of Pyo-salpinx.

Dr. HERMAN: (1) Hydro-hæmato-salpinx; (2) Hypertrophy of the Decidua.

Dr. LEITH NAPIER: (1) Suppurating Dermoid Cyst; (2) a Macerated Fœtus.

Dr. SHAW MACKENZIE: Suppurating Dermoid Cyst.

Dr. HANDFIELD JONES: Fibroid Tumour of the Uterus.

Dr. GRAILY HEWITT: Case of Abortion, showing the Amnion passing through the Chorion.

Dr. BUTLER SMYTHE: Dermoid Cyst.

Specimen of Spondylolisthesis: The report of the committee on this specimen, exhibited at the April meeting of the Society, 1891, by Mr. J. H. Targett, was read.

## MANCHESTER PATHOLOGICAL SOCIETY.

THE annual meeting for the session 1891-92 of the above Society was held at Owens College on Oct. 14th, 1891, at 7.30 P.M., when the following elections took place:—President: T. C. Railton, M.D. Vice-Presidents: H. R. Hutton, M.B., and F. A. Southam, M.B. Treasurer: W. Thorburn, B.S. Secretary: T. Harris, M.D. Committee: J. S. Bury, M.D.; H. A. G. Brooke, M.B.; W. Coates; C. E. Richmond; E. Roberts; A. Robinson, M.D.; R. B. Wild, M.D.; and R. T. Williamson, M.D. Auditors: T. N. Kelynack, M.B., and J. M. H. Martin, M.D.

Mr. G. A. WRIGHT exhibited a series of museum specimens.

Dr. J. M. H. MARTIN showed the kidneys, ureters, and bladder from a case of Hydronephrosis. The preparation was from a youth eighteen years of age. The pelvis of the kidneys was dilated; their cortex was thinned out to one-eighth of an inch at the thickest part. The right kidney before being emptied weighed thirty-eight ounces; left kidney thirty-six ounces without the ureters. Ureters distended and closely resembling a small intestine; the distension uniform throughout down to the bladder, where in each channel there was a narrow constricted portion. Bladder walls thickened and corrugated. With difficulty a fine probe was passed from the bladder into the ureters. The fluid in the kidneys, ureters, and bladder was of the same nature; it was of a light straw colour, milky, and contained albumen. The left ventricle of the heart was hypertrophied. The aortic valves were thickened and incompetent. The cusps of the mitral valve were thickened, the mitral orifice being stenosed.

# Reviews and Notices of Books.

*Lead Poisoning in its Acute and Chronic Forms: being the Gulstonian Lectures for the year 1891.* By THOMAS OLIVER, M.A., M.D., F.R.C.P., Professor of Physiology, University of Durham, and Physician to the Royal Infirmary, Newcastle-on-Tyne. Edinburgh: Young J. Pentland. 1891.

WHEN Dr. Oliver selected the subject of Lead Poisoning for the Gulstonian Lectures of this year he was supplying a gap in medical literature which has for a long time needed to be filled; for, notwithstanding the importance of the subject in relation to the health of towns as regards their water-supply, and the prevention of plumbism among the workers of our lead factories, and the recent discoveries with regard to the pathological action of lead on the system, no monograph on the subject in the English language has appeared for many years. Dr. Oliver's work, however, as may be readily imagined from the almost unique experience that the Royal Infirmary at Newcastle affords for the study of plumbic poisoning, owing to the extensive manufactories for the production of white-lead, and also to the numerous trades in which that substance is largely used, is no mere compilation of already known facts and statistics, but contains many important researches carried on by Dr. Oliver on cases under his own observation — researches which not only throw fresh light on many incidents in the progress of the disease, but also help to clear up many doubtful points.

The first lecture deals with the etiology of plumbism, and the various ways by which lead is introduced into the system. It points to the necessity of minute inquiry in any case where the poison has not found entrance in a manifest manner, either from water contaminated by lead or from daily contact with it in its manufacture or its use as pigment. Regarding the influence of forge smoke, Dr. Oliver alludes to the interesting observations of Schroeder and Reuss, who state that by roadsides and in the meadows and parks near to the forges are mountain-ash trees, the berries of which are favourite food for nearly all the birds during the winter months. Below and close to these trees birds were often found sickly or dead; those that were alive had their extremities contracted, and their power of flight appeared paralysed. The antlers of stags which roam the forests near these forges exhibit certain monstrosities such as are apt to occur amongst stags

whose sexual organs have been injured, for these animals, like men, have their reproductive organs affected by lead poisoning. In relation to this source of lead poisoning, Freytag has found, on meadow hay in the neighbourhood of the Altenau forges, a deposit of lead oxide equal to 0027 per cent. Another mode in which lead may be accidentally conveyed to a distance is from the deposition of town manure, containing as it does the refuse of paint, lead from tea chests, painted oil-cloth, &c.; and Dr. Gamgee has shown that cattle have died from drinking water contaminated by this means and by eating the grass of fields on which this refuse has been placed. Another important point determined by Dr. Oliver is that in his experience females are more specially affected by lead than males. Out of 135 cases of lead-poisoning admitted as in-patients at the Royal Infirmary, Newcastle, 91 were women and 44 males. This is contrary to the usually received opinion as expressed by Alderson and Des Planches, and certainly, so far as our experience in London is concerned, more males apply for admission at the hospitals than females. No doubt the conditions of trade vary in different towns, and more females may be employed in one place than another. Dr. Oliver thinks this predisposition depends upon sexual idiosyncrasy, and that in the case of women it is most marked between the age of eighteen to twenty-three, whilst in the male it is generally observed between forty-one and forty-eight. Besides sexual and individual predisposition—leaving out of the question the consideration of the effects of inadequate food or clothing — there is one agent which greatly increases the influence of one or other of these factors, and that is alcohol. In the second lecture the author draws a classic picture of the three types of lead-poisoning (the abdominal, cerebral, and neuro-muscular), and then passes on to describe the anæmia, the blue line on the gums and patches of mucous membrane, and the relation of lead colic to arterial tension. In the third and concluding lecture he draws attention to the channels by which lead enters the system, especially by the digestive tract, illustrating his remarks by experiments with the gastric juice, pancreatic juice, and bile, showing their action respectively upon carbonate of lead. A considerable part of this lecture is also devoted to experimental pathology, as showing the effect of lead on the liver and kidneys. Some very instructive experiments are given, demonstrating the effect lead has on the growth and nutrition of plants. Dr. Oliver also directs attention to the marked absence of gout, associated with plumbism, amongst the workmen in the north of England, and contrasts it with the experience of London physicians; but he is not quite satisfied with the explanation usually given, that it is due to the alcoholic differences of the two populations, the northerner drinking more whisky, the Londoner more malt liquor. Dr. Oliver has some original observations on the elimination of uric acid in lead-poisoning, and from analysis he shows that any absolute relationship cannot be stated to exist between the elimination of urea, uric acid, and lead. What these observations do show is that metabolism is much deranged, and that in nearly all cases extremely deficient renal function is to be noted. With regard to the preventive treatment of the disease there is little fresh to say. He is decidedly of opinion that for the relief of lead colic the treatment with iodide of potassium and sulphate of magnesium is the best; but he warns us against using the former salt without great care, since in acute cases the too rapid entrance into the blood of the soluble iodide lead salt has been known to bring about fatal results. He has obtained good results in the treatment of lead colic with belladonna, but has never pushed it as some have recommended. For acute lead encephalopathy, when the patient is in convulsions, he recommends nitrite of amyl as the remedy *par excellence*. When there is eclampsia and suppression of urine, pilocarpine employed subcutaneously gives satisfactory results.

The work is exceedingly well illustrated with numerous chromo-lithographs, charts, and tables of statistics showing indefatigable industry and research. In short, Dr. Oliver has produced a monograph of classic value which must remain a work of standard reference on the subject for many years to come.

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*The Climatologist: a Monthly Journal of Medicine, devoted to the Relation of Climate, Mineral Springs, Diet, Preventive Medicine, Race, Occupation, Life Insurance, and Sanitary Science to Disease.* Edited by JOHN M. KEATING, M.D., FRED. A. PACKARD, M.D., and CHAS. F. GARDINER, M.D. Philadelphia: W. B. Saunders. August, 1891.

THIS is the first number of a new journal, of which we have given the somewhat comprehensive title. Its appearance is one of the many recent signs of the increasing attention that is being devoted to climatology and cognate subjects, and the more general recognition of the important place which they must in future fill in the field of medical science. The editors in their introduction express the hope that "a journal devoted to the study of all diseases into which climate, soil, race, occupation, hereditation, diet, contagion, &c., enter prominently as factors, will receive the encouragement of all, and become eventually an authority upon all subjects which are included in its title." The present number contains three articles upon climatological subjects — viz, "Bethlehem and Maplewood, a Contribution to the Medical Climatology of the White Mountains," by W. H. Geddings, M.D.; "The Climate of Southern California," by W. A. Edwards, M.D.; and "Chorea in relation to Climate," by J. T. Eskridge, M.D. There are also articles upon Koch's Tuberculin, Vaso-motor Paralysis in Influenza, the Contagiousness of La Grippe, &c. We propose to confine our remarks to the first three articles.

The White Mountains of New Hampshire are coming into repute as a summer resort for the inhabitants of the Eastern States. Bethlehem, the best-known spot in this district, stands at an elevation of 1459 feet above the sea level; the mean summer temperature is 64·91° F., the daily range at the same season 10·3°, the relative humidity 69·5°, and the average number of days per month in summer that the patient can spend entirely out of doors twenty-five. There is a fair amount of protection from unfavourable winds, and while fogs are frequent in the valleys, they do not rise, as a general rule, to the plateau on which Bethlehem stands. Convalescents from acute and exhausting diseases, and sufferers from phthisis, dyspepsia, hay fever, nervous diseases of the asthenic type, &c., have been found to receive benefit from the place. There is ample hotel accommodation. The season is from June to September. Dr. Geddings claims, in conclusion, that "Bethlehem and Maplewood possess nearly all the attributes of a perfect summer resort—viz., a cool, pure, and clear atmosphere, a water-supply freedom from all danger of contamination, with adequate drainage, free from malaria and typhoid fever, absence of insect pests, and surroundings sufficiently beautiful to satisfy the most fastidious taste."

"The Climate of Southern California," by Dr. W. A. Edwards of San Diego, is a more interesting article to the English reader. The writer is very laudatory of the district in question, but there can be little doubt of its remarkable merits as a sanatorium. Southern California possesses that unusual combination—a marine climate that is at once fairly dry and exceptionally equable. "The afternoon temperature at San Diego in December, January, February, and March was [year not stated] 60·5°, 60·9°, 57·7°, 62·4° respectively, while in July it was only 63·4°; the maximum temperature for July was 79°, and for

January 74°." These are very remarkable and exceptional figures. The rainfall is very low—eleven inches at San Diego. There are very few days in the winter during which the patient cannot spend nearly all his time out of doors. "The coast fog, about which so much has been written, is most frequent in this region during the months of April and May. The fog-bank usually rolls in about nightfall, and disappears a few hours after sunrise. Generally by 9.30 A.M. the coast is entirely free of fog. One of the great advantages of Southern California is that it presents all degrees of elevation from sea-level up to 12,000 feet, so that changes can be had at discretion. It is, no doubt, the coast that has been hitherto best known, and to which most references to the merits of the State, from the climatological point of view, relate; but the interior has evidently considerable potentialities of usefulness. The proportion of cases of phthisis to other diseases in Southern California is only 4·4 per cent. among the native races, whereas in the foreign population—that is, those from other States—it is 43·5 per cent.; 47 per cent. of those admitted to hospitals in Southern California have been in the State less than one year. Dr. Edwards has "not met with any cases of pleurisy, asthma, or bronchitis in the native population. All the cases of these maladies which have been observed have occurred in those who have sought this State in order to restore their health, and have either suffered from one of these diseases in their homes or have developed them owing to their weakened condition from prolonged illness." This is a remarkable statement. We are not informed over what period the writer's experience extended, or what were his opportunities for observation. Erysipelas is said to be almost unknown. Great efficacy is claimed for the climate in renal affections and rheumatism.

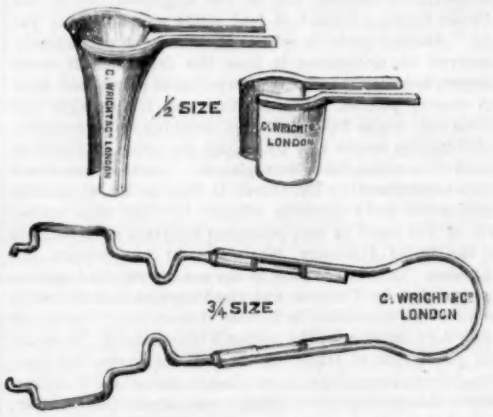
Dr. Eskridge's article on "Chorea in relation to Climate" contains a recantation of the view put forward by the writer in 1887—that the disease was "of longer duration and less influenced by treatment" in Colorado than at lower levels. As the result of fuller experience, "he is not prepared to say that chorea is not unfavourably influenced by the climate of Colorado, especially at the higher altitudes of the State; but the more he studies the disease there, the more firmly is he convinced that an undue prejudice exists in the minds of physicians against the climate for this class of nervous derangements, and in consequence the evil effects of climate on chorea (if such exists) is very much exaggerated."

We wish *The Climatologist* a prosperous and useful career. It has made a fairly good start; and if, in a department of medicine where vagueness and lack of precision are the great vices, it cultivates a thoroughly scientific spirit of exactness and impartiality, it will confer a great benefit upon the profession of medicine and upon humanity.

# New Invention.

## A COMBINED NASAL, AURAL, AND OPHTHALMIC SPECULUM.

IT will be acknowledged on all hands that a practitioner, and especially a country practitioner, cannot carry many instruments with him in his ordinary rounds, and that it is highly convenient to pack those which are frequently required in as small a space as possible. An ingenious arrangement has been devised by Mr. G. H. Wade, by means of which the surgeon may always have at hand an instrument for separating the eyelids, for examining the external auditory meatus, and for use as a nasal speculum. It consists of a spring like the bow of a pair of sugar-tongs, on the inner surface of the blades of which two perforated plates are soldered; into these the arms of an ophthalmic, a nasal, or an aural speculum can be inserted, and three useful instruments for diagnosis are obtained at a moment's




notice, and are perfectly satisfactory in their action. The accompanying woodcut shows clearly the construction of the instrument.

# Analytical Records.

## DOVER'S LEMON SAUCE.

(7, KYLEMORE-ROAD, WEST HAMPSTEAD.)

THE chief ingredients of this sauce, judging from the taste, are little different from those used in the host of similar preparations that are to be found on every restaurant table. But, as its name would imply, it possesses, in addition, an agreeable flavour of lemon, which no doubt renders it a good relish when used with veal or fish. Examination indicated the absence of injurious substances.

## BANANA FLOUR.

(SOUTH AFRICAN FOOD MANUFACTORY, PINE-TERRACE AND SCHOOL-LANE, DURBAN.)

Banana flour is interesting as a colonial product, but the results yielded on analysis are, it will be admitted, somewhat disappointing. The nitrogen is almost exactly 1 per cent.—that is, about half the quantity contained in wheaten flour, while the mineral matter amounts to 1·40 per cent. and moisture to 12·72 per cent. Microscopical examination revealed granules of characteristic kidney shape. We do not see that any great advantage is gained by desiccating this fruit; the fresh ripe banana possesses, no doubt, distinct nutritious value, and when it is required there is no difficulty in procuring it in excellent condition at the London markets.

## EXTRACT OF BEEF, VIGORAL, AND PEPSIN AND PANCREATIN PREPARATIONS.

(ARMOUR AND CO., CHICAGO, U.S.A.)

According to the results of our experiments the meat preparations and the digestive ferments of Messrs. Armour's manufacture are to be assigned a place high up in the category of valuable alimentary products. We have received no less than three varieties of pepsin—amorphous, scale, and a solution in glycerin, pepsin glycerole—every one of which furnished excellent results. Each acted readily on hard white of egg, transforming it into soluble albumins and peptone. The pancreatin preparations, including tablets, acted similarly and with equal readiness on both albumen and starch. The extract of beef, when submitted

to analysis, gave the following figures: Nitrogen, 9·85 per cent. (equal to 62·05 meat principles, adopting the factor 6·3); other organic matter, 6·08 per cent.; mineral matter (consisting chiefly of soluble potassium phosphate), 26·54 per cent.; moisture, 5·33 per cent. It is quite soluble in water, devoid of all burnt flavour, and yields on suitable treatment an abundance in crystalline form of that interesting, stimulating principle, creatine. Vigoral is a less concentrated extract, to which has been wisely added dry powdered beef. Examination under the microscope confirms this statement, as characteristic striated fibre was recognised. Vigoral contains, therefore, all the valuable elements of sound beef-tea. Analysis gave the following results:—Nitrogen, 7·00 per cent., equal to 44·10 per cent. meat principles; other organic constituents, 7·62 per cent.; mineral matter (chiefly soluble phosphate), 16·38 per cent; moisture, 31·90 per cent. Analysis, moreover, indicated the entire absence of objectionable preservatives. In consideration of the foregoing results it is evident that these preparations are justly entitled to rank as food adjuvants of exceptional value and excellence.

### ANTISEPTIC JELLIES (EUCALYPTUS, THYMOL) AND ANTISEPTIC PELLETS.

(C. J. HEWLETT & SON, CHARLOTTE-STREET, E.C.)

Antiseptic jellies containing a definite amount of perchloride of mercury, and also pellets which, when dissolved in a pint of water, yield a standard solution of this salt, must necessarily prove useful to the surgeon. Examination shows that the pellets made by the above firm each contain 0·26 grm. mercuric chloride, the quantity indicated on the label, so that on dissolving one in a pint of water a solution containing one part of the salt in 2000 is obtained. When a limited quantity of potassic iodide is incorporated into the jellies a distinct pink tinge is produced, which disappears on adding an excess of the iodide. In the same way, ammonium sulphide turns the jelly black from formation of mercuric sulphide. The vehicle used is evidently of the vaseline type. The jellies are obviously well adapted for gynæcological and general surgical purposes, while the pellets yield at once a solution (delicately coloured with a little aniline dye) useful for douches and injections &c. The solution may also be employed, it is needless to add, for rinsing the hands after surgical operations.

### SNELLING'S PATENT HOP TEA.

(THE HOP TEA CO., LTD., ST. GEORGE'S HOUSE, EASTCHEAP, E.C.)

We have examined this preparation on a previous occasion, but an opportunity of inspecting the process of its manufacture at Maidstone has since arisen. The hops are delivered at the factory in a green state and allowed to wither. During this process, which lasts some hours, the cones become soft and limp; they are then submitted to the rolling machine and afterwards allowed to ferment. The rolling process causes the sap to flow, and hence fermentation is promoted. The leaves are then placed in a hot-air drying machine termed a "Sirocco," and baked there some twenty minutes during exposure to a draught of air at a temperature of 300°F. It is claimed that this is an improvement over the old system of drying hops, which consists in baking them in an ordinary way and exposing them to the fumes of burning sulphur, the process occupying many hours. In addition to this, hops treated with sulphur fumes are ill-adapted for admixture with tea, as the delicate flavour of the tea is said to be impaired. The tea used in the above preparation is a blend of Indian and Ceylon, and, judging from analysis, is evidently of a choice kind. The mineral matter amounted to 5·44 per cent., of which 3·08 parts were soluble in water. Alkalinity of the ash was equal to 1·43 per cent. in terms of potash; tannin, 10·44 per cent. The flavour of the decoction is very good, and just what one would expect from such an admixture. The idea is (and it is not wholly irrational) that the tonic property of the hop modifies the astringency of the tea, and, being a sedative, tends to counteract any otherwise excessive effect due to tea alone. It is a novel preparation, and those who cannot tolerate ordinary tea without a feeling of discomfort may be glad to give it a trial.

### ANASPALINE, A CHOLESTERIN FAT, AND COMPRESSED TABLETS OF VARIOUS DRUGS.

(JOHN RICHARDSON AND CO., FRIAR-LANE, LEICESTER.)

Anaspaline is the name given to a cholesterin fat derived from sheep's wool. It is a creamy-looking body, which does not appear to admit of saponification. In an experiment undertaken with the view of determining its water-absorbing capacity, we found that 18·04 grammes took up exactly 9·50 grammes of water—that is, equal to an absorbing power of 53 per cent. Sulphuric acid strikes a pink tinge with the preparation, a reaction which would indicate traces of cholesterin. Anaspaline is evidently admirably adapted as a vehicle for holding those medicaments in suspension which are of value in the treatment of disease by external application. Amongst other preparations of this firm we have examined compressed tablets of sulphur (Dr. Garrod's formula), of antipyrin, and of phenacetin. They are well made, and possess the quality demanded of this form of drug—they disintegrate quickly when placed in water. Phenacetin was recognised by the nitrous acid test.

### DERMATOL AND TABLOIDS OF CASCARA SAGRADA.

(BURROUGHS, WELLCOME, & CO., SNOW HILL BUILDINGS, E.C.)

"Dermatol" is a substance recommended for slight skin affections, excoriations, &c. It is used in combination with an inert powder such as starch, or as an ointment in lanoline. "Dermatol" is a yellow powder resembling iodoform, but free from smell. Heated on platinum it scintillates, and small shining beads of metallic bismuth separate. It is insoluble in water, but freely soluble in hydrochloric acid, the solution giving, with sulphuretted hydrogen, a brownish-black precipitate of bismuth sulphide, and with perchloride of iron an inky colour. It is, in fact, subgallate of bismuth. The tabloids of cascara sagrada are sugar-coated, and in lenticular form. On breaking the coating a brown, consolidated mass is exposed, which readily dissolves in water. Each is stated to contain two grains of the dry extract. This now well-known form of medicament—the tabloid—is obviously useful in the administration of a drug like cascara sagrada, and more especially when it is to be given to children.

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BRITISH MEDICAL TEMPERANCE ASSOCIATION.—On Friday, Nov. 6th, a conference of medical men on the subject of total abstinence, convened by the British Medical Temperance Association, was held in the Belmont Hall, Clapham, London. After an introduction by Dr. Richardson, the president of the Association, an animated discussion ensued. As one result of the conference three gentlemen expressed their intention of joining the Association.

LEAD-POISONING IN THE WAKEFIELD DISTRICT.—The death of the wife of a Lofthouse miner from alleged lead-poisoning has been made the subject of a coroner's inquest, which was adjourned in order that the intentions of the Local Government Board might be ascertained with regard to a general inquiry as to lead-poisoning in the district. The reply of the Central Board was to the effect that, whilst thinking it inadvisable to intervene in that particular case, it is directing attention to the matter, and an investigation is being proceeded with. At the adjourned inquest, subsequently, a verdict was returned "that the deceased woman, being unhealthy, died from lead-poisoning, the cause of which is unknown."

# THE LANCET.

*LONDON: SATURDAY, NOVEMBER 14, 1891.*


WHETHER the proceedings at the annual general meeting of Fellows and Members of the Royal College of Surgeons of England, held in the theatre of the College on Thursday, the 5th inst., have advanced or retarded the cause of constitutional reform at that institution, it would be difficult at present to determine. The two resolutions of which notice had been given were unexceptionable, and no fault could fairly be found with the temperate speeches by which they were supported. The first resolution, which was proposed by Mr. JOSEPH SMITH, and seconded by Mr. CABLE, was a reiteration of a familiar resolution which has been passed at the College before, and has been generally accepted by the reforming sections of the Fellows and Members as a basis for the enfranchisement of the Members of the College. Its terms were: "That the Council of the College be, and is hereby requested, to take immediate steps to give effect to the resolution carried at the meeting of November 4th, 1886—namely, that in the opinion of this meeting it would conduce to the welfare of the Royal College of Surgeons, and would tend to promote the interests of medical polity and education: (1) If Members of the College were empowered to take part, separately or conjointly with the Fellows, in the election of members of the Council. (2) If Members of the College were eligible to sit on the Council, provided (*a*) that no Member of the College shall be entitled to vote until he have been such Member for a period of ten years; (*b*) that no Member of the College shall be eligible to sit on the Council till he have been such Member for a period of twenty years; (*c*) that not more than one-fourth of the Council shall consist of Members of the College who are not also Fellows." It was not to be expected that either Mr. JOSEPH SMITH or Mr. CABLE would be able to impart any fresh interest to a well-worn theme, or add force to the arguments by which the claims of the Members of the College to a share in the government have been recommended in former years by Fellows of the College. We note, however, with satisfaction that neither the proposer nor seconder of the first resolution advanced any extravagant claims on behalf of the Members, and the latter was careful to repudiate any desire or intention on the part of the Members of the College to usurp the privileges of the Fellows. No one else cared to speak on the main question, and, after a skirmish on a collateral topic on which we shall comment presently, the resolution was put and carried with scarcely a dissentient in a very well attended meeting. Equally fortunate was the second resolution, which was moved by Mr. BRUCE CLARKE and seconded by Mr. JABEZ HOGG: "That in view of the fact that the General Medical Council has invited the consideration of the Colleges of Physicians and Surgeons to the details of the scheme suggested for the fulfilment of the five years' curriculum recently recommended by the General Medical Council, and in view of the fact that a scheme emanating from the Council of this College has been submitted in print to the Fellows of the Royal College of Physicians without the Fellows of this College having been officially informed of the nature of the scheme, this meeting records its regret that on so important a matter the body corporate of this College was not consulted." Mr. BRUCE CLARKE'S observations were excellent, and were sufficient for the purpose of recommending the principle involved in the resolution to the acceptance of the meeting. It was impossible, however, either for him or for any other Fellow or Member, in a mixed assembly of Fellows and Members occupied by the anticipation of more exciting topics, to offer any detailed criticism of an educational scheme already adopted by the Council; and the disappointment expressed by the President that there had not been some good honest criticism on the most important part of the report, and that so little had been said with regard to a scheme involving so many complicated interests, would not have been aroused if he had borne in mind that an annual general meeting can only be expected to concern itself with principles and not with details, and that if criticism of detailed schemes is wished for by the Council, special meetings must be convened and ample time allowed for the previous digestion of complicated reports. The Fellows and Members were unable to obtain the report until a week before the meeting, and the President's remarks led to a request from the meeting to the Council that a copy of the report should be sent by post to each Fellow and Member a fortnight before the annual meeting. This request will in all probability be complied with, for, as the report ends at the beginning of July, there will be no difficulty in having it drawn up and issued a week earlier than was the case this year. The rest of the proceedings of the meeting were of a more debatable and exciting character, and sprang out of a notice of motion which, as was announced in THE LANCET of Oct. 31st, had been given by the Secretary of the Association of Fellows that Mr. LAWSON TAIT would raise as a point of order the question of reading and confirming the minutes of the previous general meeting. This proposal was decided by the President and Secretary of the College, but without instructions from the Council, to be out of order and inadmissible, and Mr. TAIT came down to the meeting with a letter from the Secretary in his pocket informing him that he would not be able to raise the question, as each meeting is complete in itself, and this particular meeting was called by the Council to receive the annual report. Mr. TAIT rose immediately after the first resolution had been seconded, and, after stating that what he had to say bore indirectly upon the resolution, was proceeding to read and comment on the correspondence when he was stopped by the President, who asked him to confine himself to the resolution before the meeting. With much dexterity Mr. TAIT evaded the adverse ruling of the President, who made no further attempt to confine the speaker within the strict limits of order and debate, and having read the letter of the Secretary of the College, asked how it was, if the meeting was only called to receive the annual report, the first resolution was permitted, and whether he would be allowed to move an amendment referring the report back

to the Council. This question elicited from the President the statement that the resolution might have been ruled out of order, but it was thought expedient to allow the discussion to proceed, and that the Fellows and Members had no power either to adopt or to alter any report laid before them by the Council; but that, if desired by the meeting on sufficient grounds, the Council would be willing to alter the report. Thereupon Mr. NELSON HARDY inquired whether, if the report was found to be defective in some important respect, that would be sufficient ground for referring it back to the Council, and, having been told that the Council would carefully consider any reasons given for considering the report defective, specified the omission from the report of any reference to the general meeting called by the Council, and held in the College theatre in May, in reference to the scheme for the reconstitution of the University of London. The President explained that the meeting was not recorded because it had nothing to do with the work of the Council during the Collegiate year, and that it would not only be out of order but worse than useless for the meeting to pass a resolution referring the report back to the Council. As Mr. HARDY expressed his intention to go on with his resolution, he had to wait till after Mr. BRUCE CLARKE'S motion had been disposed of, when he moved and Mr. DICKINSON seconded: "That the report now presented be referred back to the Council with the request that the defect which has been pointed out may be remedied—namely, the omission from the report of the work of the College of any mention of an important meeting held on the 11th May, 1891, in reference to the New University for London question, with a further request that the report may be laid before an adjourned meeting of this College as soon as convenient after its completion." Laudably anxious to conciliate the goodwill of the President and Council, and to reduce the jarring elements to concord, Mr. TWEEDY suggested that the resolution should take the form of a simple request to the Council to remedy the omission in the report without referring the report back to the Council, and without asking for another general meeting. As Mr. HARDY would not accept the alteration, Mr. TWEEDY moved his suggested form of resolution as an amendment, but the amendment was lost by a small majority. The original resolution was then put and carried.

It was natural, perhaps, that on the eve of a conflict in the Court of Chancery there should be a combative spirit among the Members of the College. But it ought to have been borne in mind that the art of war does not consist of battles only, and certainly not of the direct assault on impregnable positions. It was well said that the charge of the six hundred at Balaclava was "magnificent, but that it was not war." In reference to the general meeting at the College of Surgeons, the President and Council are masters of the situation, and as the reports of the Council are not submitted to the meetings for approval and adoption or otherwise, it would have been more consonant with courtesy, prudence, and expediency, after the observations and ruling of the President, if Mr. TWEEDY'S wise intervention had been generally supported. The Members of the College, if they wish to succeed and to see their just claims recognised, should limit their immediate aims to that which is practicable, and should avoid any course of action which is likely to alienate from them that sympathy and support from the reforming party of the Fellows which have been of such signal service to them in the past, and have brought the formal recognition of their claims to representation on the Council within the range of practical politics.

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PROFESSOR KLEBS of Zurich publishes in the *Deutsche Medicinische Wochenschrift* (Nov. 5th) a brief statement of his own researches upon tuberculin, in anticipation of a more detailed work now in course of publication. He takes this step because, as he says, the recent communication of Professor KOCH must have somewhat checked the hope that tuberculin deprived of its injurious qualities can prove a real curative agent for tuberculosis. In spite of the facts adduced by speakers at the recent meeting of the Association of Naturalists and Physicians at Halle, there is, he says, no doubt a very marked tendency against its employment among the laity and the profession, although many still hope that a substance which is undoubtedly effectual in curing animal tuberculosis may prove to be of service to man. At the Congress of Internal Medicine, Professor KLEBS urged that in man tuberculin produces many effects which have nothing to do with its specific action on tuberculous tissue, and which may be avoided without affecting that property. Subsequent investigation has shown the correctness of this view. Hence he finds himself in the peculiar position of having to defend tuberculin against its own discoverer. The researches in question have been carried on with the cognisance of Professor KOCH, who furnished Professor KLEBS with the crude tuberculin. The difference in the results obtained by them is explicable when it is borne in mind that the former tested the activity of his products by observing the dose necessary to give fatal results in animals within thirty hours and that required to induce high fever in the human subject; whereas the latter regarded these severe effects as indications of the impurity of the material, and if they did occur, he held this to show either that the noxious substances had been insufficiently removed, or that they were inextricably combined with the curative principle, or else that they were identical with the latter. Professor KOCH seems convinced that the last view is the correct one; but Professor KLEBS does not think so, and accounts for the fact that the same substance which acts curatively in animals produces injurious symptoms in man by the explanation that animals are immune to the noxious elements of crude tuberculin just as they are against other poisons. He holds this difference in action to prove that the curative agent is different from the noxious element in tuberculin. These injurious substances are no doubt alkaloidal in nature, for that tuberculin contains alkaloids is easily proved by its responding to the characteristic reactions of such bodies. Professor KOCH with DR. PROSKAUER and BRIEGER found these reactions, but left that path of inquiry to follow another—namely, the attempt to obtain pure tuberculin by treating it with small quantities of alcohol. From the first however, Professor KLEBS has aimed at ridding tuberculin of the alkaloidal substances as being the surest way to its purification. He found that, when the alcoholic precipitate was treated with chloroform or benzol, the "lymph"

yielded very slight alkaloidal reactions. But he also found that this *tuberculinum depuratum* was just as effective as the raw substance in completely curing tubercle in inoculated animals. He goes further, and declares that if tuberculin does not possess any bacillicidal power, but only, as Professor KOCH stated, acts by causing necrosis of tuberculous tissues, its employment must be deemed rather harmful than otherwise, for he is convinced from his researches that such necrosis is invariably accompanied by an increase of the bacilli. Thus the free expectoration of bacilli in cases treated by tuberculin, as well as the occurrence of severe reactions, were no proof of the good effect of tuberculin, but rather of the reverse. Professor KOCH seems to have realised this, and to be now employing only very small doses. But Professor KLEBS has not found this expedient necessary in the use of his extracts. The method of extraction does not always succeed in removing all the harmful ingredients. The best results are yielded by extracting the alcohol precipitate, which has been redissolved in water, by means of a mixture of absolute alcohol, chloroform, and "crystallised" benzol. The mixture must be agitated for a long time, and much waste occurs from the thick foam that forms, and which takes long to subside. A better plan, however, is to precipitate the alkaloids, whereby the active substance—to which he attributes bacillicidal properties, and therefore terms "tuberculocidin"—can be separated by water. It is an albumose, and it, or its combinations with tannin or other precipitants, has an undoubted effect in tuberculosis, never exciting fever, and producing marked improvement. Hectic and night sweats disappear; signs of catarrhal process in the lungs, together with cough and expectoration, rapidly diminish; appetite and body weight increase. The bacilli in the sputum become granular, and less and less capable of receiving the staining reagents, and finally disappear. In observing the effects of the use of this "tuberculocidin," Professor KLEBS is being assisted by Dr. C. SPENGLER of Davos and Dr. NOLDA of Montreux.

The importance of this research of Professor KLEBS is enhanced by the fact that it is in harmony with the work carried on in this country by Mr. WATSON CHEYNE and Dr. HUNTER; and it is somewhat surprising that neither Professor KLEBS nor Professor KOCH should have made any reference to their inquiry. What, however, is even more remarkable is the tone adopted by Professor KOCH towards his fellow-workers in this field. He not only ignores their labours—and it is noteworthy that NENCKI and HAMMERSCHLAG extracted albumoses from cultures of tubercle bacilli some year or two before Professor KOCH announced his discovery of tuberculin, but actually accuses them of not experimenting for themselves, and of waiting impatiently for his own declarations. This is so contrary to fact that it is not to be wondered at that Professor HUEPPE should have protested against it, and this in no measured terms. He subjects each of Professor KOCH'S "communications" to most vigorous criticism (*Berliner Klin. Wochenschr.*, Nov. 9th, 1891), and asserts that the latest of them contains nothing that had not been independently shown by others, whilst it does not go so far even as their work has in the isolation of the active principle of tuberculin. He quotes Professor KOCH'S earlier criticisms of M. PASTEUR against his own present methods of publication of his researches. And he might have added that no work of the French *savant* was ever produced with the air of mystery that did so much harm in the first announcements upon tuberculin. Finally, Dr. HUEPPE deals severely with the accusations brought by Professor KOCH against bacteriologists in general, and shows how ill-founded they are. It is, indeed, to be regretted that any opportunity should have been given for such criticism, since in the feelings that it generates the cause of true science cannot but suffer. We cannot think that Professor KOCH will allow his reputation to be dimmed by maintaining an attitude towards those who, after all, are doing a great deal to enhance the value of his discoveries, which, if not overtly hostile, is even more objectionable in exhibiting a studied indifference to their work.

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ARE the manners of medical men and their methods of practice really lower, as has been suggested in some quarters, than they were in previous generations? People easily allow themselves to believe in the virtues of past times and the degeneracy of present ones, like the delightful old Foxhunter in ADDISON, who vowed that there had been no fine weather since the Revolution. But the point is not one that should be taken for granted. Certainly there is far more good feeling and good brotherly consideration in the profession than we are apt to think. Anything to the contrary of which any man has to complain is often due to his own fault. He is hoist with his own petard; he is paid back in his own coin. We are not defending this treatment of even an erring brother. He is oftener to be improved by a little kindness and generosity, but even so the opposite treatment is often provoked by his own fault. Some of the devices for stimulating practice which we read of in olden times, even among eminent physicians, were worse than anything that could be found now. The tendency to abuse the present has to be kept in check. For one thing, publicity is much greater now than it ever was before. And everything slightly sensational or scandalous is, unfortunately, sure to be welcome and to command readers. The very advance of the medical profession, its larger importance, its widening influence, its multiplying functions, make it more interesting to the public and more open to public notice. It is, after all, the popular profession. It is indispensable to all classes and to men of all creeds, and so it comes more and more to be talked of and written about. But, though we are not disposed hastily to admit that the profession is in any degree degenerating in tone and ethics, we are quite prepared to consider the question, and any real, sound evidence bearing upon it. If we are not better than our predecessors, we ought to be; we have a larger field of study and of duty. The conception of the medical man has been raised partly by legislation and partly by the general progress of society. The general practitioner is no longer a mere apothecary or superior druggist. He is, in an increasing degree from year to year, supposed to be, and indeed is, advancing in general education and in familiarity with those sciences on which medicine rests—physics and biology. In increasing numbers medical men graduate, and ally themselves with universities the very atmosphere of which

is supposed to mollify and refine manners. But still it is a question of fact, and facts are only to be ascertained by inquiry.

We have heard it advanced that many old practitioners think and say there is a decline in the ethics of medical men, that they stoop to do things which their fathers would not have done, and that such charges are not confined to old practitioners, but are made in newspapers and illustrated in coroners' inquests. We do not propose at present to discuss the truth of such allegations so much as to inquire who is to decide the question. Whose business is it to investigate charges of unworthy method? *Quis custodiet ipsos custodes?* We have said that a larger proportion of men than ever succeed in attaching themselves to one or other of our great Universities, which should guide their graduates in ways of dignity and call them to account whenever they stray. But this is just what the Universities do not do, and, indeed, decline to do. On rare occasions graduates drag their degrees in the mire; but their University will not remonstrate. Some of the corporations are no better. They have by-laws to secure professional conduct in their diplomates, but they do not apply them. Beyond taking their fees for examinations, they take no interest in them, and allow some of their members to go from one step of professional misconduct to another till they incur public censure or disgrace. Many a man is lost irretrievably who might have been saved by a kindly and early remonstrance from his college, and who would have been grateful ever afterwards for it. The excuse is that such a disciplinary function rests with the General Medical Council. So it does in its ultimate and supreme form. But it rests primarily with the medical authorities. They give diplomas for the most part on conditions of honourable and professional conduct, and they are charged, as all professional bodies are, with a duty of supervision. We accuse them of shirking and neglecting this duty. In our division of the kingdom perhaps the neglect has not been so great as in others. But it is everywhere very marked. And in apportioning blame for things that are undoubtedly happening, and which bring a blush of shame to medical men, we should accord a chief share to the medical bodies. The Medical Council is not guiltless. It has had to be stirred up to its duties by the public or by responsible men—coroners, ministers, and others. It has been so supine as to be almost immovable. There have been of late years indications of greater activity and perception of duty. But there is much arrear of work to be done in the public interest, and which the public looks to the Council to see done. By more care of admission into the profession, and by more discipline of men when admitted, it will secure a larger share of public respect than it has yet received. If it thinks either its own powers or the powers of the individual bodies insufficient, it should insist on their being strengthened. But it must not be allowed to forget its disciplinary functions.

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A SERIES of four reports just issued by the Local Government Board seem to indicate a new departure in our system of local sanitary administration. The reports are the result of an investigation made by Dr. BARRY into the sanitary circumstances and administration of the four urban districts of Cumberworth, Hepworth, Kirkheaton, and Lepton, all within the West Riding of Yorkshire. All of them tend to show that the prevailing sanitary circumstances are, in many respects, seriously defective; that the local health administration is, for one reason or another, lax and negligent; and that until the steps were adopted which tend to the inquiries on which the reports are based, but little was done to amend the faulty conditions which tended to nuisance and to the injury of public health. The reports are compiled with care, and suffice amply to bring home the charge of default; but their general interest lies not so much in this as in the fact that the intervention of the Local Government Board had its initiative in representations made by the West Riding County Council.

Under Section 19 (2) of the Local Government Act of 1888 it is enacted that if it appears to the County Council from any report of a local medical officer of health that the Public Health Act, 1875, has not been properly put in force within the district to which the report relates, or that any other matter affecting the public health of the district requires to be remedied, the Council may cause a representation to be made to the Local Government Board on the matter. It had, ever since 1875, been possible for any aggrieved person or resident to make formal complaint to the like effect; but the difficulty of finding such person ready to face the local feeling of opposition to increased expenditure, even where it was most necessary in the interests of health, often enabled sanitary default to be steadily maintained. But now a general supervising body, free from any local restrictions such as those which would influence a solitary ratepayer, have had a statutory place as complainants assigned to them; and they are a body whose complaints are certain at all times to be received with the consideration they deserve. In one sense, it is fortunate that the West Riding County Council are the first body to have proceeded under the new statute, because they are a body who can feel certain in being correctly advised by the able medical officer of health whom they have appointed; and it has doubtless been felt at Whitehall that any complaints from such a source were of a sort that needed the attention of the central government. But the method of intervention is noteworthy, especially if it is to be regarded as a precedent in such cases. The complaint is based on statements made by a medical officer of health, and hence the Board, as a first step, appoint one of their own medical staff to report as to the extent of the alleged default from the medical and health point of view. The publication of Dr. BARRY'S reports in this case have shown that the statements of the local health reports are borne out; they have confirmed the position taken by the County Council; and it may be that, without further pressure, the local authorities will so far take note of the triple alliance against their attitude of apathy as to proceed forthwith to make amends. If it should be otherwise, the Local Government Board have now before them all the evidence which would justify their intervention with a view to the adoption of compulsory measures; and they have behind them the force of public opinion which is centred in the representatives of the West Riding administrative County.

The precedent may, however, serve as a caution. There

are a number of County Councils who deal in a very cursory manner with the local health reports submitted to them, and they lack the matured advice which the West Riding Council finds in Dr. WHITELEGGE. Such Councils may be induced to follow suit, but if they do it will be well for them to remember that the significance of their complaint and official representations will be inquired into by one of the staff of the Local Government Board before any action is taken by that body in the way of the exercise of compulsory powers. And it will hence be well that in every such case the County Council should see that it is at the onset well advised as to the action it proposes to take, and that the material on which the representation is based is of a sort that will bear full investigation by an official who is versed in the question of public health administration. In short, if County Councils desire to make good their position under the 19th section of the Local Government Act, they can hardly do better than follow on the lines indicated by the West Riding. If they act otherwise and fail to substantiate their position, their influence as supervisors of local sanitary administration in counties will be very materially damaged. It still remains to be seen what will be done as regards the four defaulting urban authorities whose case has given rise to these comments, but, under any circumstances, the incident is one of which note may well be taken in connexion with the future of public health administration in this country.

WE publish to-day a second Life Assurance Supplement, dealing with a subject which we introduced to our readers last year in a somewhat unusual manner. The considerations which led us to adopt this course at that time have been already explained, but it may be not unfitting to repeat in this place that we had been most painfully impressed, in the course of the administration of THE LANCET Relief Fund, by many instances of unthriftiness on the part of medical men, which entailed the direst consequences to their dependents when they themselves were removed by premature decease. The inquiries to which we were prompted by these experiences fully confirmed the apprehensions which we had formed as to the existence of widespread neglect of life assurance on the part of medical men, and we felt that some effort to bring this matter strongly home to the mind and conscience of the profession was warranted, and more than warranted, by the circumstances of the case.

In returning to the subject on the present occasion, we are influenced in an appreciable measure by new considerations, although we are far from supposing that the circumstances which first induced us to deal with this matter have entirely passed away. From what we have said upon this topic in the introductory passage of the Supplement itself, it will be seen that enough has been accomplished to give us fair occasion for resting a little on our oars, if that were all that had to be considered. But in seeking to inform our professional brethren we have succeeded in informing ourselves, and since November last we have been much impressed with the view of this subject which is presented by our Supplement to-day. It seemed to us, therefore, very desirable, while still the matter was, so to say, in the air, to follow up the Supplement of last year with a further one which should exhibit this additional aspect, and at the same time serve to gather, as into a focus, the results in the way of improved practice which the past year has accomplished. The Supplement which forms a part of this impression is the outcome of these reflections and of the labour in which we have again been able to enlist the assistance of many friends. In particular, we desire to acknowledge the courtesy with which the managers of the various life assurance offices have responded to our inquiries—inquiries which, in spite of our best efforts to confine them within a reasonable compass, have certainly in many instances proved exceedingly troublesome in this sense, that no pains have been spared in the preparation of the replies to make them exhaustive and complete. We should have been glad to be able to do better justice than a mere digest can possibly do to these carefully prepared statements; but unfortunately the volume of the matter with which we have been supplied has been such that only by the most unsparing compression has it been possible to exhibit it in any sense completely. So far as has been possible, we have included in our statement even the results of returns which have reached us late, and if in any particular it should prove that our task of reproduction has been unskilfully or unsuccessfully performed, we hope that those who may be interested will believe that the magnitude and difficulty of the task, and not any want of effort made to carry it through, is the primary cause of any such mishap.

# Annotations.

"Ne quid nimis."

## ELECTION OF DIRECT REPRESENTATIVES.

WE have received a copy of the addresses issued by Dr. Frederick H. Alderson and Mr. George BROWN, who have offered themselves as eligible for the direct representation of English general practitioners in the Medical Council. In some ways this movement, though we cannot but regard it as being on the whole unfortunate, is not altogether to be regretted. On the one hand, it involves a contest, and entails upon the Council a considerable, and in our opinion an unnecessary, expenditure. On the other, it must do some good by stimulating the too languid interest of medical practitioners in a matter which, amid other pressing duties, many of them might be content to overlook. It will serve as one more reminder that they stand in the position of an electorate, and that as a body, whether willing or not, they must from time to time speak by deputies on behalf of their professional needs and privileges. The addresses above mentioned are of interest on account of one sentiment which forms their keynote. They assert the principle of self-representation on the part of general practitioners. In so far they deserve and possess our sympathy. At the same time, however, we feel that no merely abstract idea, commendable though it may be in itself, should close our eyes to pressing and practical exigencies. What we require for the work to be done in the Council is a representation which shall not be indigenous only, but also truly representative. Experience teaches us that we have found men of intelligence and capability in those whom five years ago we returned by an overwhelming majority. We are convinced that these men, though not all actually occupied with general practice, are in complete accord with one another

and with the body of general practitioners as to present and future issues before the Council. We therefore trust that they will again be returned as the English direct representatives.

## THE HOUSING OF THE WORKING CLASSES.

A PRINTED REPORT has been issued by Dr. Thresh to the Chelmsford and Malden rural sanitary authorities, setting out in detail the considerations that should serve as a guide to the authorities in deciding what are the conditions which would justify proceedings as to buildings that are unfit for human habitation, and that should be dealt with under the Housing of the Working Classes Act, 1890, and those which would rather call for action under the Public Health Act, 1875, where the premises are such as to come within the terms "a nuisance or dangerous to health." Where action is intended, and especially in rural districts, Dr. Thresh's comprehensive paper may well be studied by those health officers who are not as yet fully conversant with the subject.

## ABOLITION OF PRIVATE SLAUGHTER-HOUSES.

THE Mayor of Clichy, a suburb to the north of Paris, has just set a valuable example in respect to the suppression of private slaughter-houses. This is a question in which the French are distinctly in advance of the English. The law governing this matter bears the date of April 15th, 1838. This is the precise text:—"Article 1. [Slaughter-houses] are considered as inconvenient, insalubrious, and dangerous establishments, taking rank in the first class, the public and common slaughter-houses to be erected in any commune, whatever may be its population. Article 2. The opening of any public or common slaughter-house legally established will entail, as a matter of right, the suppression of all private slaughter-houses situated in the locality." Articles 3 and 4 of this law explain that the Ministers of the Interior, of Public Works, and of Agriculture and Commerce shall be simultaneously requested to authorise the creation of a public slaughter-house, so that one single Act may suffice to legalise the enterprise. So far the term "locality" has been taken to mean the legal boundaries of a local authority. It will be readily understood that every local authority has not had the enterprise or the financial means to build a public slaughter-house of its own. This is the position of the commune or local authority of Clichy. The Mayor of Clichy has, however, hit upon an ingenious device for getting out of the difficulty. In the neighbouring commune of Levallois-Perret there is a public slaughter-house, and the Mayor of Clichy has recently prevailed upon the Minister of Commerce to issue an ordinance, of which the following is the most important passage: "Considering that in the said law the term 'locality' should be understood as meaning an agglomeration capable of being usefully supplied by the slaughter-house; considering that, if a commune extends to a great distance, the locality where the public slaughter-house would entail the suppression of private slaughter-houses might not comprise the entire commune; but, on the contrary, if an agglomeration extends over several communes, one single slaughter-house could supply the entire agglomeration, and would entail the suppression of private slaughter-houses there existing; considering that, as a matter of fact, the communes of Clichy and Levallois-Perret form one single agglomeration of inhabitants"—the decree goes on to say, in lengthy, legal phraseology, that the Mayor of Clichy may abolish all private slaughter-houses in the district of Clichy, and compel the butchers to slaughter their cattle at the public slaughter-house of the Levallois-Perret district or commune. For our part, it matters little by what legal technicality the end is attained. The circumstances show us that where there is a will there is a way; and the Mayor of Clichy is to be congratulated on having somehow or other obtained the authority to abolish private slaughter-houses in his district. This is an example that English sanitary reformers should take to heart. It is time that the Legislature of England should favour, at least as efficaciously as the laws that prevail in France, the abolition of so dangerous a nuisance as the private slaughter-house. We are not aware that French butchers are worse off now that public slaughter-houses are the general rule throughout France; but we do know that the public enjoy much greater security with regard to the wholesomeness of the meat offered for sale.

## CHEAP DISPENSING.

IN an address to the Midland Counties Chemists' Association at Birmingham, Sir James Sawyer spoke in an entertaining vein upon the relations between pharmacists and physicians, and upon the yet more congenial topic of the evils of cheap dispensing. He remarked that the cultivation of low prices was one of the features of the last quarter of this century; that the old attachment of the purchaser to the vendor—in which the purchaser trusted the vendor and the vendor very often trusted the purchaser—was disappearing. He did not consider that the fault rested with the pharmacists, who had to a great extent to follow the fashion; but he thought that the public were to blame, and were doing harm to the advancement of the remedial art by the excessive pursuit of low-priced remedies. Of course these views were received with hearty appreciation, so that when he ventured to touch delicately upon the question of prescribing by chemists he had not lost the ear of his audience, and he made even his little reproof seem gracious by immediately after expressing a wish that medical practitioners would not so frequently dispense. The address was throughout genial and witty, though it may be doubted whether the changes suggested are very practicable.

## POISONOUS FISH.

DR. M. I. ARNSTAMOFF publishes in the *Centralblatt für Bacteriologie und Parasiten* the observations and experiments which he made in Astrachan on the nature of fish poison. He had clinically observed eleven cases of poisoning from eating raw salt fish, and in six of these he had an opportunity of performing post-mortem examinations. The fishes, the eating of which produced symptoms of poisoning, were salmon, beluga, sturgeon, and ssewrjuga, all of which had been partaken of raw. The salmon and ssewrjuga had neither looked suspicious nor was their taste peculiar, but the microscope revealed an immense number of living micro-organisms extraordinarily similar in both fishes, but presenting some differences when in cultures. Their colonies on agar-agar remind the observer of typhoid bacilli. The symptoms of poisoning, as clinically observed, are general debility, dull abdominal pains, dyspnœa, dilated pupils, partial loss of sight, with occasional diplopia and vertigo, paresis of the organs of secretion, complete dryness of the mucous membrane of the mouth and tongue, with absence of power to swallow and aphonia, severe constipation with dysuria, decrease of temperature amounting to a degree centigrade and more, occasional gastritis or gastro-enteritis, and, later on, vomiting of central origin. All these symptoms are generally observed only from ten to twenty-four hours after eating the raw fish, and are at first slight, but continually increase, even after the removal from the stomach and intestinal canal of all contents, while the quantity of the fish taken seems to have no influence on the intensity of the symptoms. The pathological appearance of the bodies was that of death from asphyxia.

Microscopically examined, the parenchymatous juices and the liver, spleen, and kidneys presented the same kind of bacilli as the poisonous fish. The author also made experiments on living animals by hypodermically injecting cultures of the four species of bacilli. Dogs, cats, and rabbits were after a few hours affected by the same symptoms which are characteristic of fish poison in man, but the rabbits were the only animals that died, and their hyperæmic organs again produced the specific bacilli. In conclusion, the author expresses his opinion that the pathogenic bacilli do not enter the fishes after their capture and while they are being prepared for consumption, but that they are the exciting cause of specific diseases in the various species of fish. He consequently expects that as a result of more exact clinical observations of fish-poisoning a different series of symptoms will be found for each species of fish.

## THE SANITATION OF FLORENCE.

IT is at the instance of the Syndic that Sir Douglas Galton is now in Florence to make a thorough examination of the hygienic condition of the city. The drainage system and the water-supply are chiefly engaging his attention, and he has already visited many houses in the old central quarter, tested the water of several *pozzi* (wells), and begun a searching investigation of the works designed to bring the *acqua potabile* within the reach of the citizens. Sir Douglas Galton is assisted by several able Italian sanitary engineers, and receives every aid from the Syndic to put the sanitation of Florence on a satisfactory basis, with the double object of safeguarding the health of the residents and of silencing sinister rumours, industriously circulated, to turn the stream of tourists and visitors into other channels.

## THE BACTERIOLOGY OF THE TEES WATER.

A REPORT on the bacteriology of the Tees water has been submitted by Mr. A. C. Wilson, borough analyst for Stockton, to Mr. Clegg, the borough health officer, and it is one which it is most difficult to understand. A given sample of Tees water is declared by this analyst to be "very heavily charged with organic matter of vegetable origin." Nevertheless, this same sample, when portions of it are transferred by him to "sterilised" meat jelly, again and again fails to afford any "growth or sign of micro-organisms." That this failure of the sample in question to start colonies rested not with the meat jelly but with the Tees water is emphasised by the statement that exposure of the jelly for half a minute to the atmosphere resulted in abundant growth of micro-organic colonies thereon. Now, considering that the Tees water (whether or not charged with vegetable matter) is exposed in its course to the air of the Tees valley, and that the sample of it in question must needs have been exposed to air at least on the occasion of its collection, the difficulty in accepting the Stockton analyst's dictum that Tees water is practically germ-free becomes wellnigh insuperable; unless, indeed, it be permissible to suspect that by some accident or other the final sterilisation of the meat jelly of experiment was effected after the drops of Tees water sample had been added to it. Mr. Wilson also lays it down that the Tees water when in flood, though apparently at its worst, is really at its best. Now, in view of the fact that these examinations of the water are sure to be, locally at least, regarded as having some bearing upon the typhoid fever which prevailed so exceptionally amongst the consumers of the Tees water in 1890-91, it appears unfortunate that the results should be issued without a word of caution that they can have no bearing whatever upon the causation of that epidemic. The disease was shown to have occurred in significant sequence to a sudden flush of excremental and other filth along the stream and past the intakes of the water company many months before these examinations were made; and so long as such filth has access to the river, and tends to accumulate on its banks, so long will a special danger attach to the river water at flood times. Indeed, whilst we are puzzling over this bacteriological difficulty, we receive the medical officer's report to the North Riding County Council, which tells us that as late as last month, at one spot alone, on the Yorkshire bank of the Tees, "the liquid refuse of 535 persons must eventually gravitate into the river." It is the entry of such filth as this into the river that is the real point of importance to the consumers of Tees water.

## DEATH OF MR. WHARTON JONES.

WE regret to announce the death of Mr. Wharton Jones, F.R.S., at Ventnor, where he had resided for many years in great simplicity and retirement, feeling and writing very earnestly until the last on the subject of the state of the blood and bloodvessels in inflammation, and what he considered the blundering excogitations relating to it too often found in the text-books. Mr. Wharton Jones's age was advanced, probably fully eighty-four, and possibly more. He had but a short illness. He was out walking on Monday, Nov. 2nd; on the Thursday night he became faint, and gradually sank and died on Saturday, the 7th inst. We hope very shortly to give a fuller account of his life and work.

## NEW FACILITIES FOR TRAVELLING TO THE RIVIERA.

ONCE more the railway companies are busy conveying patients and others who are flying southwards to escape our English winter. Once more also the railway companies are seeking to improve their services, which, though already in many instances comfortable and luxurious, can never be too carefully managed where invalids are concerned. One of the difficulties in going south has been the crossing of the town of Paris to reach the Lyons and Mediterranean line from the northern line station. This could be avoided by taking the *train de luxe*, which, however, did not run every day. Now a connexion has been established with the daily service leaving London at 11 A.M. and reaching Paris at 7 P.M. The traveller will then simply have to change carriages at the northern station, where he will find the southern train awaiting him, and dinner ready in the dining-car. In twenty-five minutes the train is off *en route* for the Riviera. A little later, at 7.40 P.M., follows the *train de luxe*. Both these trains have dining-cars; but the first train has only the ordinary first-class carriages, while the "luxe" train has sleeping-cars and *lits salon*—that is, carriages with lavatories, and seats that can be converted into beds. From London Marseilles can now be reached in twenty-two hours and three-quarters, Nice in twenty-seven and a half, and Monte Carlo an hour later. The luggage is examined on arriving, consequently the patient may be under shelter and in warmed carriages or cabins the whole time, and the only exposure to the possible inclemency of the weather is during the moment or two required to board and land from the steamer. Apart from this improvement in the through communication to the Riviera, travellers of moderate means will be glad to hear that the London, Chatham, and Dover Railway Company purpose, on and after the 15th of this month, to add third-class carriages to the two daily mail services. The fare to Paris will be £1 10*s.* single, and £2 13*s.* 2*d.* return, available for a month. This is somewhat dearer than the cheap night service, but the passengers will not be delayed on the road, will travel with the mail throughout, and may cross in the daytime by the magnificent steamer *Invicta*, instead of, as at pre-

sent, by the old, little, and slow boats. To persons with large families or with limited means this will be a great boon. It will be particularly appreciated by those who remember the old times when the third-class train left Victoria at 6.25 P.M., and reached Dover about an hour and a half too soon for the boat. On the other side of the Channel the passenger had to walk from the pier to the town station, and wait till five in the morning. At that time only did the third-class train start, but, as it stopped at every station, it did not reach Paris till four in the afternoon. Yet many a delicate person has been compelled to endure all these hardships and delays. Now third-class travellers will be able to go as quickly as those travelling first-class, and this in the daytime as well as at night. The journey will be completed in nine hours, where formerly it took nearly twenty-two hours.

## ACTINOMYCOSIS HOMINIS.

THREE highly interesting papers were read at the Royal Medical and Chirurgical Society last Tuesday. They were contributed by Drs. W. H. and W. B. Ransom and Mr. Anderson of Nottingham, and each recorded a case of actinomycosis in the human subject. Mr. Anderson's case was, according to Prof. Crookshank, the first of its kind on record in this country, and he is much to be congratulated upon the successful issue of his extensive operation to extirpate the diseased parts. Dr. W. H. Ransom's case was remarkable for the locality involved—viz., the appendix cæci—and the simulation of the clinical features of perityphlitis. Dr. W. B. Ransom's case was even more peculiar, in that it not only presented signs of intestinal affection, but of involvement of the urinary tract (prostate?), for the characteristic actinomyces were found in the urine. The recovery of this patient is very satisfactory. The chief lessons derived from these records are: first, the readiness with which the fungus may be detected in the discharges; next, the tendency of the growth to be localised and not disseminated; and, thirdly, the suggestion (amounting in Dr. W. B. Ransom's case almost to certainty) of the etiology of the affection in cereals. On this last-named point it is very desirable that extended study should be made of such plants in respect to the parasitism of actinomyces.

## MEDICAL MOBILISATION IN INDIA.

ALTHOUGH our military forces in India are but a handful compared with the enormous native population, still a large part of the British Army is stationed there in the numerous cantonments and camps scattered over the country. In matters affecting transport and equipment, the military organisation of India has to be such as to admit of prompt mobilisation. Some small expedition has to be provided for from time to time, and troops have to move out of their cantonments into camp whenever cholera appears in their midst. India is, in fact, a great training ground for our army. Some years ago, following the conclusion of the Afghan war, and after the Russian scare, a great effort was made in the way of reorganisation to put things in order for any eventualities that might arise; and field hospitals for army corps were authorised to be stored in readiness for the field on the arrival of orders for mobilisation. Of late, attention has been called by the *Pioneer* to the distribution of the fourteen field hospitals authorised for the purpose. In order to guard against the deterioration of the medicines and other articles, these have to be examined and renewed from time to time, and this can only be done in connexion with a medical store depôt. The medical store having been removed from Allahabad, the field hospitals previously at that station have had to be removed also. The field hospitals for immediate issue are now stored at Calcutta, Mian Mir, Bombay, and Madras, and it is regarded as a mistake to have three of the field hospitals at Madras, as the requirements of Burmah, which is the only place it is likely to be called upon to supply, could be equally well met from Calcutta. The wisdom of the removal of the medical store depôt from Allahabad is questioned. It is contended that it would have been preferable to put the medical depôt in Allahabad Fort or at Agra, and that, anyhow, the importance of having a medical store depôt inside the walls of some place capable of defence should not be lost sight of. It may be mentioned that the second edition of the "Field Service Manual for the Medical Department of the Indian Army," issued from the Surgeon-General's office in 1888, brings together all the information, regulations, and scales of equipment connected with field hospitals and field service in India. It is greatly to be regretted that the differences of climate, habits and customs of the peoples, and the varied and different nature of military service in India, prevent a uniformity of system, method, and equipment being adopted in England and India alike, so that all the experience gained in the one country should be equally useful and available in the other.

## THE PURPOSE OF ATHLETICS.

SENSIBLE and healthy on the whole, as became its subject, was the tone of a holiday speech on athletics recently delivered at Leamington by the Speaker of the House of Commons. But for one word in it, we might regard as trite the statement that no fitter outlet for energy, no better remedy for mental strain, existed than moderate indulgence in physical exercise. "Measure," says the poet, "is medicine," and surely never more than in these days might the often-repeated, soon-forgotten name of moderation lay just claim to a share in the interest which belongs to novelty. The life of athletic sport, like that of art, is long, but never aged. Among ourselves it bids fair to flourish with perennial attractiveness and in multiplied variety. There is also, happily, little room for doubt that the trust reposed in it by the right honourable gentleman as a true corrective of lazy, loafing youth will be amply justified by its fast-increasing use. We are threatened rather by danger of an opposite kind in the possibility of its abuse by heedless excess. Young men, and young women too, since they also have a muscular system to educate, will therefore do well to be guided by a sound caution conveyed in the address referred to, and employ themselves in bodily exercise as a means of healthy training, not of record-breaking overstrain, taking care beforehand to learn their measure of endurance from some veteran athlete.

## TUBERCULOSIS OF THE CARDIAC MUSCLE.

DR. SIEGFRIED POLLAK, assistant house surgeon at the Jewish Hospital in Budapest, publishes in the *Pester Medicinisch-Chirurgische Presse* a retrospect of the literature referring to tuberculosis of the cardiac muscle, and embracing so far twenty-six cases. He then communicates a case which had come under his own observation. The patient, a man sixty-five years old, had been coughing a little for the last five months, and had lost his appetite. He was considerably emaciated, of a pale-grey complexion, and with remarkably pale mucous membrane. The percussion sound over the left scapula was muffled, but everywhere else normal. Over the left apex respiration was uncertain and rough. No apex beat could be detected by palpation. The pulse was small, and the arterial walls rather rigid. On admission the patient was free from fever, complained of great debility, had little cough, and no expectoration. While he was in the hospital the evening temperature occasionally rose a little, once only reaching to 102° F. The want of appetite and gradually increasing cachexia caused some suspicion of malignant abdominal tumour to be entertained,

but no other evidence of this could be found. The idea of Addison's disease could not, however, be entirely discarded in view of the patient's complexion, together with his steadily increasing debility. Organic disease of the heart could not be thought of in the absence of all symptoms. The patient died exactly a month after admission. The post-mortem examination resulted in finding peribronchitis nodosa, caseous lobular and interstitial pneumonia on both sides, tuberculous inflammation of the cervical and dorsal vertebræ, tuberculosis of the lymphatic glands in the posterior mediastinum, and of the spleen, liver, and right auricle. No signs of syphilis were found. The case proves that the cardiac muscle may contain extensive tumours without disturbance of the heart's function during life. Tuberculosis of the myocardium is generally rare, and in most cases only small tubercles, at the most the size of a nut, have been observed and appear multiple; but here an isolated tuberculous mass of the size of a fowl's egg was found in the cardiac muscle. The age of the patient was also remarkable, as tuberculosis of the myocardium is generally a disease occurring in infancy, and extremely rare in aged people.

## CHOLERA AT DAMASCUS.

TOWARDS the close of last month cholera was making rapid progress in Damascus, and in the week ending Nov. 1st no less than 276 fatal attacks occurred. A communication from Dr. F. J. Mackinnon, medical missionary at that city, informs us that the epidemic is decreasing there.

## THE NOTIFICATION ACT AND LOCAL ACTS.

A VERY sensible judgment has been delivered by Sheriff Muir in the Airdrie Sheriff's Court, which the very pride of the defenders should make them accept. An action was raised in this court, in which Dr. Donald McPhail of Whiflet sued the Town Council as local authority of the borough of Coatbridge for payment of fees amounting to £19 5*s.* for reporting to them cases of measles and whooping-cough from May 22nd, 1890, to May 30th, 1891. The Coatbridge Burgh Act, subsection 11 of Section 74, imposes upon every medical practitioner resident or practising within the burgh the duty of reporting every case of infectious disease occurring within his practice, failing which he has to be judged guilty of an offence under the Act. For each case reported and verified he was to be paid 2*s.* 6*d.* The Town Council have adopted the Infectious Diseases (Notification) Act, 1889, and their contention in the trial was that in so doing the previous local Act—the Coatbridge Burgh Act—was superseded. They defended on the ground that the Notification Act did not include measles and whooping-cough among infectious diseases, and that the maxim *Leges posteriores contrarias abrogant* should apply. They based the contention on the 14th clause of the Notification Act, which is as follows:—"Where this Act is put in force in any district in which there is a local Act for the like purpose as this Act, the enactments of such local Act, so far as they relate to that purpose, shall cease to be in operation." But the Sheriff maintained that there was no inconsistency between the two Acts, only the local Act went further than the general one, and had the virtue of including two serious diseases about the infectiousness of which there could be no doubt—measles and whooping-cough. As to the expediency of such inclusion, he quoted THE LANCET and the opinion of the President of the Society of Medical Officers of Health, to the effect that measles and whooping-cough had very grave effects on education and health, and ought to be notified. As to the legal question of one Act superseding another, he quoted the words of Justice Smith, who said: "A repeal by implication is only effective when the provisions of a later enactment are so inconsistent with or repugnant to the provisions of an earlier one that the two cannot stand together." There can be no doubt that the framers of the Coatbridge Act took a larger and wiser view of the range that should be covered by a Notification Act than the framers of the Notification Act took, and that the former Act related to two purposes not covered by the latter one, but entirely consistent with its spirit. Indeed, the Notification Act positively anticipates an extension of the list of diseases to be notified. We cannot, of course, debate all the legal bearings of this case; but it is humiliating to see a sanitary authority, which had shown itself in advance of Parliament, trying to recede from its position, and evade the payments which its own Act had provided for wise reasons of public good. The judgment of the Sheriff commends itself to common sense, and to all those who view such questions from a medical standpoint.

## WHITE OF EGG IN THE TREATMENT OF EXCORIATED NIPPLES.

EXCORIATED NIPPLES often cause considerable pain, and may induce, as is well known, mammary abscess. In a recent number of the *New York Medical Journal* Dr. Frank van Allen speaks highly of the use of the white of egg as a treatment for the sore nipples of nursing women. He paints the nipples several times a day with the white of egg, and this soothing albuminous covering forms a delicate film over the abraded nipple, and the surface is healed in a few hours except in severe cases. The albumen may best be applied just after nursing, and, as a somewhat thick film is formed, it is well for the nipple to be moistened with a soft cloth dipped in water just before the baby is again put to the breast. The efficiency of the albumen is heightened by allowing it to dry thoroughly before drawing the clothes again over the breast.

## DYSENTERY IN BRITISH GUIANA.

DR. LAW, of the Penal Settlement, Massaruni, has written an instructive account of the occurrence of dysentery in British Guiana in the *Medical Annual* of that colony. That dysentery is the disease which is most prevalent in the gold diggings is only what might have been expected, but he thinks that the gold diggings are by no means entirely responsible for the great increase there has been of it. His own experience in the little hospital on the Massaruni would certainly lead him to suppose that more cases arise in the wood-cutting grants on the Essequebo. The conditions of life, however, are the same in both cases, so that what applies to the labourer in the gold diggings is equally applicable to the labourer on the timber grants. During the last twelve months he has had under his care in the Public Hospital, Massaruni (a small institution with only eight beds), sixty-six undoubted cases of dysentery. Of these sixty-six cases, forty-two came from the timber grants and quarries on the Essequebo, fifteen from the gold diggings, and nine from other parts about the rivers. The "logies" in which the labourers sleep are merely a framework of poles thatched over with palm leaves and open at the sides. The hammocks are usually slung so close together as to be almost touching each other, so that in spite of the free access of air all round, they are almost always overcrowded and very dirty. There was on the whole sixty-six cases the high death-rate of 30 per cent., while for those coming from the gold diggings it reached the appalling figure of 66 per cent. The weight of modern opinion is undoubtedly in favour of the treatment of the disease by large doses of ipecacuanha, the effectiveness of which has been shown by Dr. Maclean in his work on Tropical Diseases. Dr. Law's own experience only goes to show how fully what Dr. Maclean has laid down with regard to its use in India

applies also to British Guiana. In some cases its effect is very striking, the patient experiencing decided relief from his troublesome griping and tenesmus soon after the administration of the first full dose, and, unless the case has gone too far before coming under treatment, the change in the character of the motions after the second dose, or at the most the third, is very marked. Indeed, in the earliest stages it has been found that one large dose of thirty grains is sufficient to cut short the attack, so that a second dose has not been required. Dr. Law usually gives pernitrate of iron in doses of from fifteen to twenty minims at intervals of four hours, in addition to the ipecacuanha, and it certainly seems to have a beneficial effect, especially when begun after the first two or three doses of the latter have been given. From enemata of nitrate of silver, belladonna, bismuth, &c, he has not seen much benefit result, though in one or two rather obstinate cases some relief seemed to follow their use. In the early stage of the disease it is undoubtedly beneficial to free the bowels from any irritating masses of fæces that may remain in them, and this may be effected either by an enema or by a mild laxative.

## TEETOTALISM AND HEART DISEASE.

SOME attention has been attracted by the County Council for Somerset to the report of Mr. G. Barnes, medical officer of health for the town of Chard, on the ground that Mr. Barnes "ascribes the prevalence of heart disease to teetotalism." This somewhat strains the contention in the report, where it is shown that a number of those who crave for the alcoholic stimulant and pledge themselves not to touch it resort inordinately to other stimulants, such as tobacco, coffee, and tea; and that it is in this indirect way that teetotalism has an influence in the sense indicated. But, after all, the population of Chard need not be very much alarmed. During the past five years twenty-one deaths from heart disease have been registered in a population of over 2400 people—namely, an average of some 5 per annum. Whatever the influence of tobacco, tea, &c., as alternatives to alcohol may be on the population as a whole, the mischief induced in this way at Chard is not as yet very widespread.

## DEATH IN THE FIRST STAGE OF CHLOROFORMISATION.

WE have received reports of a fatality occurring under chloroform at St. Thomas's Home which is, if possible, even more sad than the ordinary run of such cases. We certainly do not impute blame to the chloroformist, who would appear to have been alike skilled and careful, but we may say that it seems to us to be matter for regret that chloroform was the selected anæsthetic. We learn that chloroform was administered as a preliminary to ether, according to a practice commonly pursued at St. Thomas's Hospital. The patient, was carefully examined before the anæsthetic was given, and was thought to be organically healthy, although looking anæmic and ill. He suffered from varicose veins, and for this condition was about to be operated upon in St. Thomas's Home. We are told that he dreaded the chloroform, and made the remark that he "could not be got under." Twenty or thirty drops were given on lint, but before he was nearly under the influence of the chloroform, and only a few seconds after he had been talking and struggling slightly, the anæsthetist noticed that the breathing had become rather shallow, and that the patient had grown even more pale than he was at first. At this time the pulse was fair, and the reflexes still persisted. His condition then rapidly became dangerous, and although restorative measures were adopted for over an hour, he gave no sign of resuscitation. The statement is made that the patient was "at no time under the influence of the anæsthetic," and his demise is attributed to syncope, although the anæsthetist was not sure whether the heart or the respiration ceased first, but believed the former did so. Whether or not the syncope was due wholly and solely to fear, or whether the vapour was given of sufficient strength to produce a decided action upon the heart, even though no loss of consciousness had revealed itself, and so the depressed heart was for some unexplained reason suddenly brought under the effect of psychical influence, it is impossible for us to decide, as we have no evidence upon which to rely. It is a fact that persons have died from fear pure and simple both in pre-chloroform days and within the past forty-four years, but such occurrences are happily rare. Knowing as we do that fear does act in a markedly depressing way upon the heart, it would seem a wise measure, in all instances where unusual disquietude of mind exists, to adopt an anæsthetic which, whatever may be its other drawbacks, possesses, as ether undoubtedly does, a stimulating effect upon the heart, and not to still further hamper cardiac action by employing chloroform—a heart depressant. We repeat this is our opinion, speaking generally. We have no desire to criticise or censure the chloroformist, who no doubt selected with anxious care the method of inducing anæsthesia which he deemed safest and best for the particular case, and we feel deeply for the distress which the sad result of the case must have brought him.

## THE CORLEY MEMORIAL.

IT is gratifying to be able to state that the fund for the widow and children of the late Dr. Anthony A. Corley has been well responded to by the medical profession. Since December, 1890, the sum of £3590 18s. has been collected. Some few subscribers have not yet sent in their subscriptions, but provision has been made in the trust deed to receive them, and any other moneys that may be contributed to the fund. The executive committee express their obligations to Sir Patrick Maxwell and Mr. William Kenny, Q.C., for having drawn up the trust deed, and for assisting them on other occasions. Their thanks are also tendered to "Mr. Robert Gardner, J.P., who kindly audited the accounts, and to the Proprietors of THE LANCET, who, in addition to their donation, inserted the appeal and list of subscribers as a free advertisement on several occasions."

## THE CAUSES OF MEASLES IN LEEDS.

AT the request of the Local Government Board Dr. Spottiswoode Cameron has prepared a report on the prevalence of measles in Leeds during the first quarter of the present year. The deaths numbered 172—a mortality which has not been equalled since the fourth quarter of 1886, when the same disease caused 177 deaths in the borough. There were, however, 167 deaths from measles in the first quarter of 1887, 150 in the fourth quarter of 1888, and 141 in the second quarter of 1889. During the year 1890 the total deaths from this disease were 100 in number, but of these 76 took place in the last quarter, and were thus a part of the prevalence immediately under discussion. Dr. Cameron deals at some length with the distribution of the disease, both as regards area and in point of time. He then explains in detail the meteorological influences that manifested themselves at the various stages of the prevalence, suggesting in the end that the measles poison being present in a minute molecular and somewhat volatile condition, it is prevented by the heaviness of the atmosphere and the absence of wind from getting easily away; that the difference between day and night temperatures allows the particulate poison to rise in the daytime, but compels it to

fall during the colder night, while the absence of the "wholesome washing of the rain" prevents the poison which cannot escape from being carried downward into the drains. The question of death or recovery in houses built back to back and in through houses, as also the incidence of the disease on age periods in such groups of houses, is discussed and tabulated; but it is difficult as yet to draw any general inferences from these data, the more so since other influences than these must have been at work in the production of the prevalence. Much the same may be said as to the influence of schools. Of 415 cases heard of, 132, or 31·8 per cent., attended school, but this does not show how many cases were brought about amongst non-attendants at school owing to infection carried home by brothers and sisters who were scholars. The general sanitary circumstances of the invaded houses are also considered; but we are inclined to think that questions of drainage &c. have but little, if any, direct bearing upon this disease. No school closure was attempted, and probably Dr. Cameron is right in the contention that unless he has such full and early information of the disease by means of notification as will enable him to judge better of the influences with which it is associated, he is hardly justified in arbitrarily interfering with the work of education. The report is of value as giving a mass of facts as to a disease the distribution of which is as fatal as it is obscure, and it is to be hoped that much more work on similar lines will be carried out.

## THE INFLUENZA.

IT will be seen that our Berlin correspondent reports the appearance of epidemic influenza at St. Petersburg, where two years ago it attained such notable proportions; and our Belfast correspondent mentions it as occurring in that city. In this country the disease seems to be particularly rife at Dundee and Broughty Ferry, whilst, in addition to places mentioned last week, it has again appeared in South Lincolnshire, where the cases so far have been of mild type. One of the most interesting facts to be reported this week is that nearly the whole of the passengers and crew of the P. & O. steamer *Massilia*, which arrived in London on Thursday from Australia, had suffered from influenza, which was thought to have been imported from Melbourne, where the disease was rife at the time of the departure of the vessel.

## THE ACTION OF BUCHNER'S PROTEIN ON LEUCOCYTES.

IN an article contributed by Dr. Friedrich Roemer to the *Berliner Klinische Wochenschrift* of Sept. 7th, 1891, we find some interesting facts in regard to the action of an alkali-albumin on leucocytes. It had been previously shown by Roemer, Büchner, and Lange that by the injection of sterilised cultures of bacteria an aseptic suppuration could be produced; and Büchner succeeded in isolating a substance (alkali-albumin), now known as "Büchner's protein," from these cultures. Together with Lange, the same observer showed that this product had a selective action on leucocytes. By injecting the protein into the circulation Roemer produced well-marked leucocytosis. The experiments were made on rabbits, and about 8 cc. of a 10 per cent. watery solution of the protein were injected into the veins, with the result that the number of white blood-cells were increased threefold. The general effects on the leucocytes may be summarised as follows:—1. After one intravenous injection of the protein leucocytosis resulted, the excess of white cells not being scattered through the blood, but being collected together into masses. 2. The number of leucocytes which formed these masses was practically increased by repeated injections. 3. If the vessels of the ear of a rabbit that had been thus injected were tied, and the ear then cut off and placed in a warm moist chamber at the temperature of from 37° to 38° C., after eight hours the number of leucocytes in the blood remaining in the vessels had greatly increased. Control experiments were made in reference to this point, with negative results. 4. The increase of leucocytes was only found in venous blood. 5. In specimens of blood appropriately stained many of the leucocytes were seen to be lying in pairs; but in spite of the speed at which cell formation had taken place, their nuclei were precisely similar in appearance. 6. In the same preparation, however, leucocytes in various stages of formation were seen. As regards the form of division, amitosis was most frequent; mitosis was observed, but only rarely. Roemer further made experiments as to what became of the excess of leucocytes; he found that they disappeared after the protein had ceased to act. The collections of white cells above referred to had greatly changed within twenty-four hours, the nuclei alone being visible, with only a few complete leucocytes embedded among them. In stained preparations it was seen that the condition of the nuclei had also undergone changes. Whilst in the most extreme grade of leucocytosis (1 : 38, 1 : 59), which was reached eight hours after the injection, the majority of the leucocytes had round or polymorphous nuclei, and at most possessed two nuclei; after twenty-four hours nearly all the white cells exhibited three or more nuclei, bound together by fine threads, and these were developed from those cells which had a polymorphous nucleus. Thus a retrograde metamorphosis had taken place, which supported the idea that the older leucocytes were those which possessed several nuclei.

## ABUSE OF COCAINE.

DR. STICKLER, in the *New York Medical Journal*, utters a warning against the free use of cocaine in hay fever, and quotes a case in which a patient had freely applied it to the nasal mucous membrane, and then rapidly sunk into a condition of collapse, from which he was only with considerable difficulty aroused. It also, he says, induces insomnia and impairs appetite, whilst the diaphoresis which it frequently produces is apt to be exhausting. Besides, as it allays irritation and sneezing only when the membrane is under its anæsthetic influence, it is evident that it must be used constantly, and therefore in considerable quantity, and the pleasant mental stimulation which its use produces in some is followed almost invariably by mental depression and great irritability.

## THE HEALTH OF MILAN.

THE "Ufficio Sanitario" of the Lombard capital has been strenuously engaged for months past in combating the epidemic of "ileo-typhus" (the typhoid fever of British classification), which has been steadily increasing the death-rate since January. In August the number of cases was 206, and the mortality 33; in September 231 cases were reported, and the deaths were 30; while the figures for October, not yet made public, will, it is stated, show not more favourably (perhaps less so) than those of August. As usual, it is during the prevalence of the epidemic that "preventive" or "precautionary" measures have been most energetic. Thus we read that during the later months of the year there has been a continuous series of house-to-house inspections on the part of the Sanitary Board. Four hundred habitations have already been "expurgated" with "relative disinfections." Next in order come the analyses of the drinking-water, which, however, have only been practised within the month of September! We should have thought that, dealing with typhoid fever, the Board would have subjected the water first of all to the analytical test. But no; steps seem not to have been taken in

this essential matter till the eighth month of the year, the disease having been prevalent since January, if not before. However, the drinking-water, as supplied to thirty houses, was analysed, with the result that in eighteen of these it was found good; in five, unwholesome; in seven, doubtful. We await further reports before we can pass a judgment on the water-supply of Milan as a whole; but this we already know—that the city has long been in difficulties as to how to provide herself with sufficient water of pure quality, and that, in the opinion of some of her most eminent sanitary authorities, she will never succeed till she brings it by means of an aqueduct from the neighbouring Alps. Milan lies in a plain, and, it seems, derives her drinking-water from wells sunk in it. These must inevitably become contaminated by infiltration, and, as a matter of fact, zymotic disease in considerable proportion is a chronic scourge within her gates. Till she obtains her supply from the pure source and by the aqueduct, so long desiderated, it may be—probably is—the next best thing to get the Municipal Laboratory to analyse the water periodically, and, wherever it has been found impure, to replace the old "pozzi" (wells) by the "pozzi Americani," so much in favour with her citizens. But these at best are but poor substitutes for what it is in her power to procure, and, as the "Ufficio Sanitario" has just let us see, they have not succeeded in saving her from an unusually sharp visitation of typhoid fever.

## THE RECENT OUTBREAK OF SMALL-POX IN LEEDS.

No new case of small-pox has been heard of in Leeds since Sept. 28th. As all the cases known to have occurred in the borough during the outbreak had been isolated in hospital, and as the other occupants of the houses in which they lived had been kept under careful observation, the medical officer regards the outbreak as now probably at an end. Fortunately, the accommodation provided by the corporation for small-pox was amply sufficient to cope with a small outbreak. It is to be regretted that there is not an equal ample amount of accommodation for cases of enteric and scarlet fever. Although nothing like an epidemic of the latter disease at present exists in Leeds, it has been necessary, during the present week, to decline to admit any new cases, as the accommodation is too scanty to allow the admission of fresh cases without danger to those already in the hospital.

## THE PATHOLOGY OF FRIEDREICH'S ATAXIA.

In a paper read before the American Neurological Association at the recent Congress of American Physicians and Surgeons, Dr. David Inglis of Detroit reported a case of Friedreich's ataxia in a boy six years of age, which exhibited well the characteristics pointed out by that author—viz.: "Impairment in the combination and harmony of movements, developing gradually, and spreading from the lower to the upper half of the body, and always involving, finally, the organs of speech, sensibility and the functions of the special senses and of the brain being intact; paralysis of the sphincters and trophic disturbances are absent; less common phenomena are curvature of the spine, sensations of vertigo, and nystagmus. From a clinical point of view, we must regard the disease as a progressive paralysis of the faculty of combination of movements." The pathological conditions of the disease (as gleaned from the records of thirteen cases) embrace progressive sclerosis of the columns of Goll and Burdach (partially), of the direct cerebellar tracts, with Clarke's column in most cases, and the crossed pyramidal tract in some. This seems to show that none of these tracts conduct sensory impulses, but are concerned rather with the conveyance of coördinated motor impulses. This view is supported by embryological data; for at birth, at a time when the pyramidal tracts are undeveloped, the posterior columns and direct cerebellar tracts are complete. And in the new-born infant there is coördination of involuntary movements, but no voluntary control of muscles or accuracy of sense perception. The conditions of the disease also demonstrate that Wallerian degeneration does not necessarily proceed in the direction of normal physiological impulses in a nerve tract.

## OBSERVATIONS ON NEW-BORN CHILDREN.

Dr. Aladár Szendeffy, in a recent lecture before the Medical Society of Buda-Pesth, communicated the result of his examinations as to the state of 100 new-born children. Diagrams were shown giving the proportion of weight and measure and the condition of the digestive and genital organs. The lecturer laid special stress on the recognition of proper nutrition, and the consequent necessity for exact weighing of all infants. As to the latter subject, he had paid particular attention to the proportion of weight and the length of the umbilical cord, and he had come to the conclusion that they stand in the relation of cause and effect to each other. He then discussed the polyuria of icteric infants, his systematic analysis of their urine leading him to the belief that this polyuria occurs at the expense of the organism, and in consequence considerably influences the decrease of weight. He considered it quite immaterial whether the cord is tied immediately after birth or somewhat later, as he practised both methods without observing any difference in the result. During the discussion which followed the lecture, Dr. Erőss observed that during the first days of the infant's life various diseases frequently intervened, which are generally overlooked. He himself found amongst 198 infants only 100 which were entirely healthy.

## TREPHINING IN CEREBELLAR TUMOUR.

Dr. Bradford and Dr. Knapp of Boston reported at the recent meeting of American physicians at Washington a case which was afterwards found to be one of cerebellar tumour, in which trephining was done for the relief of pressure. The patient was a man of twenty-eight, who at the age of twenty-six developed occipital headache, impairment of vision, convulsive attacks, and vomiting. He had double optic neuritis, and he rapidly became blind. He also lost the sense of smell, and he had difficulty in articulating and swallowing. His mental condition remained unaltered. He was trephined in the right temporal region over the Sylvian fissure, and his pain was thus relieved. Hernia cerebri, however, developed, and he died two months after the operation. At the necropsy it was found that there was a tuberculous mass in the left lobe of the cerebellum.

## MEDICAL JURISPRUDENCE IN ITALY.

Sixty years ago no nation stood higher than Italy for works of authority in legal medicine. Even her universities of the second rank—that of Macerata, for instance—could boast of a professor in that department whose name and fame were European. To this day, Puccinotti, the professor alluded to, is still studied and quoted by compatriot jurists and compatriot physicians and surgeons for his "Trattato di Medicina Legale" and his "Trattato Medico-Legale sulle Ferite" (Medico-legal Treatise on Wounds). But after him few names of more than average authority have cropped up in Italy; and while clinical medicine, particularly in diagnosis, has made brilliant advances, and clinical, particularly operative, surgery has run her sister very close, medico-legal studies have languished, overshadowed by a mighty past and drawing

scanty nutrition from the present. Quite recently, however, signs of renewed animation have appeared in those studies, and, at Naples especially, they have been sedulously fostered into something like their old vitality. The initiative taken by the great southern school has met with a hearty response in the schools of the north, and now we hear from Turin that a "Società Italiana di Medicina Legale" has just been formed, with a membership which includes some of the highest names in juridical as well as medical science. Its first Congress has been announced to meet at Rome in September, 1892, and a goodly list of subjects has already been prepared for treatment, with a view to discussion. Among these are: (1) a paper on the Tendency and Scope of Medico-Legal Instruction in the Schools of Jurisprudence and in those of Medicine; and (2) on the Necessity in Practice and in Teaching of Special Courses in the Universities for Students of Medical Jurisprudence. While these papers will form the *pièces de resistance* of the Congress, special *hors d'œuvres* or *entremets* will come in on subjects of combined forensic and medical interest. The announcements of promised assistance at the Congress are now numerous and influential enough to ensure its success, and to give its subject a place beside those of medico-psychology and hydrological therapeutics among the evidences of reawakened vitality conspicuous in every department of Italian medicine.

## NERVE-STRETCHING FOR NEURALGIA.

AT a recent meeting of the Association of American Physicians Dr. James Stewart of Montreal contributed a paper on Nerve-stretching for Trigeminal Neuralgia. He strongly urged the employment of this slight operation in preference to neurectomy, at least in the first instance, although the results from neurectomy are better. His reasons are that neurectomy is a dangerous operation, and that nothing is possible after it except ligature of the common carotid. He also assumes that the majority of cases of epileptiform tic are due to central mischief; but this, especially if regard is had to the most recent pathological observations, is a view which many will be inclined to controvert. Surgeons in this country also will, we think, be inclined to dispute the assertion that neurectomy is a dangerous operation. They will probably, however, agree with Dr. Stewart that nerve-stretching should be tried first, although their reasons for adopting this view will probably be different from his.

## FOREIGN UNIVERSITY INTELLIGENCE.

*Innsbrück.*—Dr. E. Boch of Laibach is likely to be appointed to the chair of Ophthalmology, in succession to Professor Borysiekiewicz.

*Jena.*—Dr. Roser of Marburg has been invited to take an Extraordinary Professorship of Chemistry.

*Lyons.*—Dr. Hugounenq has been appointed Professor of Inorganic Chemistry, and Dr. Florence Professor of Materia Medica.

*Prague.*—A new Children's Clinic has been opened, of which Professor Neureutter has been appointed Director.

*Stockholm.*—The contest for the Professorship of Ophthalmology which has been going on between Drs. Widmark and Nordenson has been decided in favour of Dr. Widmark.

## DEATHS OF EMINENT FOREIGN MEDICAL MEN.

THE deaths of the following distinguished members of the medical profession abroad have been announced:—Dr. José Maria Romero, Professor of Anatomy and of Operative Surgery in the University of Lima, Peru.—Dr. Adolf Schauenstein, Professor of State Medicine, in Graz.

GENEVA has just added to her clinical resources a "Nouveau Dispensaire" for granting medical treatment to the sick poor of the Paquis quarter, without distinction of nationality or creed. Her Polyclinique and Hospital were found to be too far from the Paquis, and her "Hospice Générale" was open for consultations only three times a week. The new "Dispensaire" is on a most commodious scale, with all the clinical and hygienic requisites, and grants not only advice but medicines and therapeutic comforts gratuitously. It is open for consultations every day, and numbers on its staff some of the best physicians of the Geneva school.

HONOURS have been pouring thick and fast on Professor Helmholtz on his attaining his seventieth birthday, one of the latest being that from the Société de Physique et Histoire Naturelle of Geneva, which has just made him a Corresponding Fellow. Along with its diploma the Society sent him a finely ornamented roll of parchment, conveying, in a Latin address, its congratulations on his jubilee, and its recognition of the services he has rendered to science and to humanity by his teaching and his work.

MR. A. E. HENSLEY, M.B. Lond., a Scholar of King's College, and who in that hospital acted as house physician, and as house surgeon to Sir Joseph Lister, has died at the early age of twenty-eight from diphtheria, accidentally contracted whilst attending a child suffering from the disease.

THE Royal College of Surgeons in Ireland have conferred their diploma in Public Health on Sir Charles Cameron, past-President of the College and President of the British Public Health Medical Society and of the Irish Medical Association.

THE opening meeting of the Epidemiological Society of London will be held on Wednesday, Nov. 18th, at 8 P.M., when the President, Dr. Joseph Ewart, will deliver the inaugural address.

THE Harveian Lectures of the Harveian Society will be given by Dr. Goodhart on Nov. 19th and 26th, and Dec. 3rd, the subject being Common Neuroses.

WE learn that it is proposed by the Syndicate to hold at Cambridge University an additional examination in Public Health during the first week of April, 1892.

## ANNUAL REPORT OF THE LOCAL GOVERNMENT BOARD.

THE recently issued twentieth Annual Report of the Local Government Board probably surpasses all its predecessors in bulk; mainly because of the increasing importance attaching to the administration of the Local Government Act by County Councils. Indeed, the volume, which includes some 900 pages, is one which becomes impossible for us to deal with except in a very general way. In that part of it which has to do with county government we learn that in the 1569 sanitary districts of England and Wales 1256 medical officers of health and 1189 inspectors of nuisances now hold office under the Orders of the Local Government Board, with a view to repayment by the county authorities of a moiety of their salaries; and, as a comparatively new departure, it is recorded that eight metropolitan medical officers now stand on a similar footing. In this connexion, it may be convenient to recall a recent decision of the Local Government Board to the effect that they have discontinued their sanction to such repayment in cases where the annual salary is below a sum of £20. The operation of the Housing of the Working

Classes Act, 1890, is also adverted to, and it is explained that County Councils are now invested with the power of taking proceedings, on the default of a rural sanitary authority, for the closing and demolition of insanitary dwellings, and the removal of obstructive buildings; and also that the Act has transferred to County Councils the jurisdiction to direct the holding of the necessary local inquiries which, under the Act of 1885, was vested in the Local Government Board. And, whilst copies of all reports from local health officers dealing with this subject must be forwarded to the County Council, it is also provided that the report of a county health officer shall be, in like manner, regarded as a representative under the Act. In Glamorganshire the Board satisfied themselves as to the propriety of a representation of the County Council under the Rivers Pollution Act, and gave their permission for the institution of proceedings against a company for polluting the river Ely. The Board have also sanctioned the formation of two joint committees to deal with the waters of the Irwell and Mersey basin and with part of the basin of the river Ribble respectively. A similar scheme as to the river Aire has temporarily been deferred, evidently because it ought to have been made to include the basin of the Calder also.

Coming next to the question of the relief of the poor, we find that on Jan. 1st, 1891, there were 12,789 fewer paupers than there were twelve months before—the decrease amounting to 1·6 per cent. of the total. The ratio of paupers per 1000 of population differs very remarkably in different counties; and it is evident that the contrast between 17·3 per 1000 in Lancashire and no less than 45·8 in Norfolk must, in an important measure, be due to administrative causes, and cannot be regarded as explained by differences in local trade prosperity. The general rate per head of the population in connexion with poor relief has been slightly but constantly diminishing since 1883. It then stood at *6s. 4d.*; it is now *5s. 9¾d.* Where there has been increase it is Middlesex that heads the list, and this must doubtless be largely due to the great cost in making arrangements for meeting new and modern demands for metropolitan paupers.

Turning to the subject of public health and local administration we find many matters of interest. Urban and rural authorities received as loans during the past year a sum of £2,827,296; £4000 were sanctioned under the Artisans and Labourers' Dwellings Improvement Act, 1875, and £88,475 were sanctioned for the use of joint boards. In addition to this, a sum of £3,901,430 was allowed to be raised by town councils and sanitary authorities under local Acts passed by Parliament. In a considerable number of instances urban powers were granted to rural authorities for such purposes as the making of by-laws for the control of new streets and buildings and for the prevention of nuisances. In six instances inquiry was held as to complaints that authorities were in default in the matters referred to in Section 299 of the Public Health Act. The Town Council of Birkenhead gave an assurance that the needed sewerage scheme should be proceeded with; in the Brixworth rural district much the same end was brought about; at St. Anne's-on-Sea the authority called in an engineer after being told that they would otherwise be declared as in default; in Worcester city the Council have been declared in default, and have been ordered to perform their duty in providing a proper scheme of sewage disposal, and some advance has been made in a few other cases. The compulsory power thus vested in the Board, and which was happily not transferred from them to County Councils, as originally proposed in 1888, is again shown to be of real value in regard of our sanitary administration, and its exercise in such cases as we have adverted to affords a healthy stimulus to needed sanitary progress. In a number of cases port sanitary administration has been put either on a better or on a permanent footing, and thus improvements affecting crews and shipping, and also having an influence in the protection of our shores from foreign epidemic disease, have been brought about. The progress made as regards artisans' dwellings, the steps adopted in connexion with the Housing of the Working Classes Act, 1890, and the adoption by authorities of the Public Health Amendment Act, 1890, and the Infectious Disease (Prevention) Act, 1890, are explained; and since these later Acts confer upon sanitary authorities many useful additional powers relating to the prevention of infection, the regulation of the height of rooms, and other allied matters, it must be a source of satisfaction that there is already so wide a desire to take advantage of the new statutory provisions. Then, again, it seems that 110 authorities made regulations with respect to dairies, cowsheds, and milkshops during the year; that a large number of improved codes for general by-laws were submitted for approval, and that steady progress is being made in a number of allied matters, notably as regards the inspection and control of canal boats.

The Local Government Board have now approved of 231 analysts for the purposes of the Sale of Food and Drugs Act; and whereas the number of analyses made averaged only one to every 1473 of the population during the years 1878–82, they were as one to every 946 people last year. The work is, however, most unequally performed, and in a number of counties and boroughs no action whatever is taken. Amongst the latter we find such places as Southport, Scarborough, and Dover, where it might have been presumed that the health sought by visitors would have been promoted by every endeavour to provide them with unadulterated food and drugs. The penalties, too, remain altogether inadequate to the gravity of the offence, and to the profit with which adulteration is associated. More than a hundred of the fines inflicted were of half-a-crown or even less. The proportion of adulterated articles turned out last year to be 11·2 per cent. of the articles examined, the percentages being highest in the following instances:—Spirits, 18·1; coffee, 15·3; drugs, 14·5; sugar, 13·8; milk, 12·8; and butter, 11·5. Compared with former years, milk would appear to be now less adulterated than it used to be; but it may be that the result is partly due to caution on the part of analysts, who, as the report states, have found out from experience the impossibility of discriminating between milk that is naturally poor and rich milk that has been watered. In Salford and Manchester great caution is exercised as to milk, samples being taken at the railway stations before the cans are delivered to the retailers, and the result is that in Salford, for example, the proportion of adulterated samples has dropped down to 2 per cent. The adulteration of milk is carried on to the greatest extent just amongst the classes who most suffer from such tampering, and it is to be hoped that much more stringent action will be taken in the matter throughout the country generally. Birmingham has taken the lead in dealing with drugs, a third of the articles examined throughout the country being dealt with in that borough, and in some cases some fairly substantial fines have been inflicted. The Report next deals with a number of subjects which, it may be expected, will be more fully discussed in the forthcoming report of the Medical Officer to the Board, and on these we reserve any comment. Taking the volume as a whole, it embodies a record of work that may well cause some astonishment; indeed, notwithstanding the attempts professed and made as to the desirability of extending the principle of local self-government, the Local Government Board appears to become more and more a centre from which emanates a general supervision of all matters relating to health, poor law, local taxation and expenditure, and a variety of other subjects incidental to these.

## THE ELECTION OF DIRECT REPRESENTATIVES.

A MEETING of the Committee for promoting the re-election of Mr. Wheelhouse, Sir W. Foster, and Dr. Glover to the General Medical Council as direct representatives for England and Wales was held on Tuesday in the rooms of the Medico-Chirurgical Society. Dr. Stokes (Highbury) presided. Mr. Wheelhouse, in the course of a brief address, narrated some interesting reminiscences of the struggle continued by Sir W. (then Dr.) B. W. Foster, Dr. Waters of Chester, and himself during twenty years, until its uncertainties and efforts resulted in the establishment of the representative body now known as the General Medical Council. The opposition manifested in certain quarters to the re-election of himself and his colleagues he considered should not be regarded as indicating any feeling of hostility. On the contrary, there had been, so far as observation went, an almost unanimous approval of their past conduct. Sir Walter Foster and Dr. Glover also addressed the meeting, after which a resolution thanking the retiring representatives for their faithful service

during the last five years, and pledging the meeting to use every means to secure their return, was proposed by Mr. Aikin, seconded by Dr. Eastes, and carried unanimously. As regards the prospects of these gentlemen, it seemed to be felt at the meeting that a large vote in their favour might be expected in the English northern counties. It was also deemed desirable to urge the many friends of the present representatives not to take their return for granted, and so possibly, by mere omission to vote, to prove their unwitting but effective enemies. Messrs. G. T. Keele and H. F. Stokes are the honorary secretaries.

### THE MODE OF PROCEDURE.

The process of election of direct representatives is a somewhat complicated one, and our readers may like to have information as to its principal steps.

The nomination papers must be signed by at least twelve registered practitioners, and each candidate must have a separate nomination paper.

The following are the steps as defined in the minutes of the Council:—

(*a*) The notice of the election to be published by the returning officer on November 9th, being fourteen days, as prescribed by the Act, before the last day on which nomination papers are to be sent in.

(*b*) The precept to the Branch Councils for the election of representatives to be issued by the returning officer (Sir Richard Quain, President of the Council) on Nov. 20th, a date which, according to the Act, must be fixed by him between Nov. 6th and Nov. 20th.

(*c*) The nomination papers to be sent in not later than Nov. 23rd, a date which, according to the Act, must be fixed by the returning officer.

(*d*) The Branch Councils to meet on Nov. 24th to receive the precept.

(*e*) The voting-papers to be issued between Nov. 24th and Nov. 28th, allowing an interval of seven days before the last day fixed for their return—viz., Dec. 5th.

(*f*) The counting of the votes to take place between Dec. 7th and Dec. 10th.

(*g*) The Branch Councils to meet on Dec. 11th to receive the results of the election and to certify them to the returning officer.

## MUNICIPAL HONOURS AND THE MEDICAL PROFESSION.

IN the recent municipal elections several corporations have elected medical men as their mayors for the ensuing year. At Brighton, Dr. JOSEPH EWART, J.P., F.R.C.P., was elected unanimously to fill the high position. At the inaugural banquet, which took place at the Royal Pavilion on Monday, Nov. 9th, over 200 guests assembled, and in proposing the toast of "The Mayor," Sir Joseph Fayrer spoke of him as his old friend and comrade. Dr. Ewart, who is a Deputy Surgeon-General (retired) of the Bengal Army, went to India about 1852, and when there commenced a series of investigations which enabled him to write that remarkable work that still remains in the statistical records of the sanitary condition of India. He was afterwards put in charge of the Statistical Office of India. In Calcutta he was appointed to a professorship, and subsequently became the president of the medical faculty in the College there. He left India with the regrets of the Government, who had trusted and appreciated him, of his brother officers, who esteemed him, and of the great community, whether native or European, in Calcutta, of which he had been the personal adviser and friend. In his reply the Mayor said he saw around him men of all denominations, representing the whole of the community, and he was glad to think they would rally round him during his year of office and make it as successful as possible. It was upon health and upon the opportunities for rational amusement that Brighton depended, and he was glad to say that within the next few years they would be able to clear away certain insanitary areas and put in their place healthy dwellings for the occupation of the working classes. He was confident that in the past all the improvements for the benefit of visitors would be of a hygienic and sanitary character of the highest order. Among the guests invited to assist at this banquet were the Editors of THE LANCET, who were regretfully unable to attend owing to previous engagements.—At Bedford, Dr. J. COOMBS, J.P., M.D.Erlang., M.R.C.S., has been chosen to act in the capacity of Mayor. He is a native of Romsey, in Hampshire, and has been resident in Bedford for nearly fifty years. He was educated at St. Bartholomew's, and afterwards studied at Erlangen, where he received the degree of M.D. He was first elected Mayor in 1871, and a second time in 1889. His portrait adorns the walls of the Shire Hall in Bedford.—Dr. W. R. HILL, J.P., M.D., M.R.C.S., has been chosen the Mayor of Lymington.—Dr. D. J. LEECH, M.D., F.R.C.P., a very well known member of the profession, is representative of the municipality of Manchester.—At Barnsley Mr. Alderman JOHN BLACKBURN, M.R.C.S., has been elected to the highest municipal office. In public life he has distinguished himself as an attentive member of the Town Council and as the chief worker in the St. John Ambulance Association in the district. He is honorary colonel of the Volunteers and Surgeon-Major of the Second Administrative Battalion York and Lancaster Volunteer Regiment.—Surgeon-Major J. PARKS, M.R.C.S., has been elected Mayor of Bury. He was proposed by Col. Walker, who stated that he had great pleasure in proposing Surgeon-Major Parks, because he knew from the feelings that had previously been shown that his nomination would be accepted by every gentleman on the Council. Mr. Bentley seconded the nomination, and said that, owing to his training as a medical man, Surgeon-Major Parks had been appointed chairman of the Health Committee, and had earned high esteem in that capacity, which he retained that day.—At Stratford-on-Avon R. L. W. GREENE, L.R.C.P. & S. Edin.; at Bridport W. A. E. HAY, J.P., M.R.C.S.; at Chichester A. S. BOSTOCK, M.R.C.S.; at Saffron Walden Alderman J. P. ATKINSON, M.D., L.R.C.P.; and at Montgomery N. W. FAIRLESS HUMPHREYS, M.R.C.S., were elected to occupy the civic chair of their respective corporations during the forthcoming twelve months.—At Yeovil Alderman Dr. COLMER was re-elected Mayor.—At Bristol Mr. CHARLES HIGHETT, J.P., M.R.C.P.Edin., was elected to the civic chair. Alderman Fox, in nominating him, described him as a very thorough man of business, of most gracious and kindly manners and spirit, and one whom he felt confident would discharge the duties of Mayor most satisfactorily.—In Scotland a great honour has been done to the medical profession by the election of Dr. J. A. RUSSELL to be Lord Provost of Edinburgh. Besides being the first medical man who has ever held this important office, Dr. Russell is probably the youngest Lord Provost that Edinburgh has had this century. The Lord Provost of Edinburgh is styled Right Honourable, and is Lord Lieutenant of the county of the city of Edinburgh. He is *ex officio* a member of the University Court, a manager of the Royal Infirmary, a member of the Board of Supervision for Scotland (which corresponds to the Local Government Board in England), a Commissioner of Northern Lights (a body which has charge of all the lighthouses round the coasts of Scotland and in the Isle of Man), and is head of the Corporation of Edinburgh. This formidable list of duties, not to mention social functions of all sorts, fully explains why professional men can seldom aspire to the honour. Dr. Russell was for eight years assistant to Sir William Turner and Demonstrator of Anatomy in the University of Edinburgh. He holds the degrees of M.A., M.B., B.Sc. in the department of Public Health, and is a Fellow of the Royal College of Physicians of Edinburgh, and a Fellow of the Royal Society of that city. He has been eleven years a Member of Council—six as chairman of the Health Committee, and for the same period a Justice of the Peace and a Bailie.

The foregoing list is specially creditable to the medical profession when such towns as Manchester, Edinburgh, Bristol, Brighton, many of the large towns in the busiest parts of Lancashire and Yorkshire, have chosen to honour with the proudest position a citizen can attain to, members of a profession which does so much for the advancement of the public weal. But it is doubly pleasing to scan the list when one remembers that most if not all the mayors are men living laborious days, and yet whose pleasure it is to devote all the time at their command to the benefit of the citizens whose confidence they have gained.

# Public Health and Poor Law.

## LOCAL GOVERNMENT DEPARTMENT.

### REPORTS OF MEDICAL OFFICERS OF HEALTH.

*Berkshire Combined Districts.*—The mean annual mortality for 1890 of these twelve sanitary districts is given as 15·1 per 1000, the rates varying between 13·5 in Maidenhead town and 17·9 in Newbury. A separate account is given of the sanitary circumstances and needs of each of the several districts, and each important prevalence of disease is discussed in connexion with the locality in which it took place. The Thames valley being in question, interest attaches in a number of places to the methods of sewerage. In Newbury urban district, for example, old and faulty sewers deliver direct into the Kennet, and until a recent public inquiry the matter had stood at a standstill, notwithstanding the consideration of several schemes of amendment. On the other hand, Abingdon, which used to be as bad, now has every house drained, and the sewage farm is reported by Dr. Woodforde to be working satisfactorily. In other places, such as Wallingford, new schemes have already been decided on, and immediate action may be anticipated. In discussing a prevalence of diphtheria in the Bradfield rural district, Dr. Woodforde gives a somewhat striking example of the probable communication of the disease by means of clothing, although the clothing itself had not been in actual contact with the sick; and in a number of other districts various points relating to the etiology of this disease are somewhat fully entered into. In all, 103 cases were notified, the largest occurrences of the disease having taken place in the Hungerford rural, the Abingdon rural, and the Newbury rural districts. Looking at the past history of this combined area, we find that a great diminution has taken place in the prevalence of diseases of the zymotic group, the present rate of death being not much more than one half what it was when Dr. Woodforde first took office.

*Llanelly Rural District.*—Dr. Evan Evans deals at length with the vital statistics of the constituent parts of his district and with occurrences of preventable sickness, but the main value of his report lies in a long tabular appendix. This deals in detail with the occurrences of disease, their causes, and the action taken on them. The report fails, however, anywhere to describe the general sanitary circumstances of the district or its wants apart from the actual dwellings or localities in which disease has already prevailed. Still, the appendix shows that much good work is done, and its publication must have distinct local value. The general death-rate during 1890 was 16·39 per 1000 living.

*Leeds Urban District.*—Dr. Spottiswoode Cameron, in issuing his first annual report on the sanitary condition of Leeds, gives an account of the many satisfactory circumstances which the borough enjoys, such as ample and excellent water, certain wide, well-paved streets, a reasonable density of population on area, &c. But whilst this is the case, there are in Leeds numbers of unhealthy yards, courts, and passages, and this borough bears the unenviable palm for its back-to-back houses. At the present day an immense number of houses are still being put up without any provision for through draught. This is, we believe, a condition fraught with serious consequences to future generations in Leeds, and one that should at once be dealt with. According to the Registrar-General's estimate of population, the annual rate of mortality in Leeds during 1890 was 22·7 per 1000, and the various causes contributing to this are discussed in the report. Continued fever was unduly prevalent, causing 126 deaths; and tuberculosis is also a heavy item, although the nomenclature of diseases involved in this group may be misleading. The inspection of the borough is being organised on a definite plan, which ought to produce good results, and the method of dealing with infectious diseases is satisfactory when such cases are heard of. But the curious and inexplicable attitude of Leeds in refusing to secure information as to such diseases by means of the law relating to notification is well known, and this must some day, if it has not already done so since the annual report was written, operate most injuriously to the community concerned.

*Lichfield Rural District.*—Dr. James Clark gives the annual death-rate for 1890 as 17·3 per 1000, the zymotic rate being 1·4; and, as regards the latter rate, he is able to record an absence of any death from typhoid fever, small-pox, and diphtheria; there was also only one death from membranous croup. A public water service is available in some of the principal portions of the district, but other parts have to put up with shallow wells sunk in a porous subsoil and liable to pollution. There is not much systematic sewerage in the district, but it is stated that, as regards solid refuse and excreta, most of the village houses have such ample garden ground that these matters can be effectually disposed of. Slop drainage is certainly needed in some parts where the present arrangements are very defective.

*St. Luke, Middlesex.*—Dr. Yarrow has a heavy mortality to ascribe to the influence of epidemic influenza during 1890. The total death-rate was 28·35 per 1000 living, the highest he has had to record; and more than one-fourth of the total mortality was due to diseases involving complications of the respiratory organs, a circumstance to which especial attention was directed by the Registrar-General as regards the country as a whole during the past year. During the year 497 cases were reported under the Notification Act, of which 347 were cases of scarlet fever, and the total cases of infectious diseases removed to the Metropolitan Asylums Board hospitals were 265. After discussing at length the sanitary legislation of the year, Dr. Yarrow gives an account of the work of the sanitary department as carried out by the inspectors.

*Wandsworth.*—This suburb and the districts of Battersea, Greenwich, Plumstead, and Poplar differ from all other metropolitan districts in having multiple advisers in health matters; but Wandsworth surpasses the others in having for its population no less than five medical officers of health. Such subdivision cannot tend to promote unity and efficiency of sanitary administration. The death-rate, which for ten years has varied between some 11 and 16 per 1000, was 14·2 last year, the zymotic rate being 2·1, whooping-cough and measles mainly accounting for the excess which this exhibits on the rate for previous years. The general report is essentially statistical, but it has local summaries appended to it.

## VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

In twenty-eight of the largest English towns 6044 births and 3486 deaths were registered during the week ending Nov. 7th. The annual rate of mortality in these towns, which had been 18·6 and 18·1 per 1000 in the preceding two weeks, rose again last week to 19·3. The rate was 17·9 in London and 20·5 in the twenty-seven provincial towns. During the first five weeks of the current quarter the death-rate in the twenty-eight towns averaged 18·5 per 1000, and was 1·9 below the mean rate in the corresponding periods of the ten years 1881–90. The lowest rates in these towns last week were 13·2 in Halifax, 14·9 in Norwich, 15·8 in Brighton, and 15·9 in Nottingham; the highest rates were 25·2 in Salford, in Wolverhampton, and in Cardiff, 26·1 in Liverpool, and 28·6 in Sunderland. The deaths referred to the principal zymotic diseases, which had declined in the preceding six weeks from 600 to 332, rose again last week to 366; they included 95 from diarrhœa, 68 from "fever" (principally enteric), 66 from measles, 65 from whooping-cough, 38 from scarlet fever, 34 from diphtheria, and not one from small-pox. The lowest death-rates from these diseases were recorded in Brighton, Birkenhead, and Plymouth, and the highest in Bolton, Wolverhampton, Sunderland, and Blackburn. The greatest mortality from measles occurred in Derby, Newcastle-upon-Tyne, and Sunderland; from "fever" in Preston, Nottingham, Portsmouth, and Sunderland; and from diarrhœa in Salford, Bolton, Wolverhampton, and Blackburn. The mortality from scarlet fever and from whooping-cough showed no marked excess in any of the twenty-eight towns. The 34 deaths from diphtheria included 25 in London. No death from small-pox was registered in any of the twenty-eight towns, one case of small-pox was under treatment on Saturday last in the Metropolitan Asylum Hospital Ship at Dartford, but not one in the Highgate Small-pox Hospital. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever

Hospital at the end of the week was 1434, against numbers increasing from 947 to 1377 on the preceding nine Saturdays; the patients admitted during the week were 154, against 159 and 139 in the previous two weeks. The deaths referred to diseases of the respiratory organs in London, which had increased in the preceding five weeks from 171 to 271, further rose last week to 329, but were 71 below the corrected average. The causes of 73, or 2·1 per cent., of the deaths in the twenty-eight towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Bristol, Oldham, Newcastle-upon-Tyne, and in seven other smaller towns; the largest proportions of uncertified deaths were recorded in Salford, Huddersfield, Sheffield, and Hull.

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had increased from 18·7 to 22·5 per 1000 in the preceding three weeks, further rose to 25·2 during the week ending Nov. 7th, and exceeded by 5·9 the mean rate that prevailed during the same period in the twenty-eight large English towns. The rates in the eight Scotch towns ranged from 17·8 in Leith and 21·2 in Aberdeen, to 27·8 in Glasgow and 28·7 in Greenock. The 649 deaths in these towns showed an increase of 71 upon the number in the preceding week, and included 13 which were referred to measles, 12 to diarrhœa, 10 to "fever," 10 to scarlet fever, 7 to diphtheria, 7 to whooping-cough, and not one to small-pox. In all, 59 deaths resulted from these principal zymotic diseases, against 52 in each of the preceding two weeks. These 59 deaths were equal to an annual rate of 2·3 per 1000, which exceeded by 0·3 the mean rate from the same diseases in the twenty-eight English towns. The fatal cases of measles, which had been 8 and 7 in the preceding two weeks, rose again last week to 13, all of which occurred in Glasgow. The 10 deaths referred to scarlet fever corresponded with the number in the previous week, and included 6 in Glasgow and 2 in Greenock. The fatal cases of "fever" which had declined from 14 to 5 in the preceding four weeks, rose again last week to 10, of which 7 occurred in Glasgow and 2 in Edinburgh. The 7 deaths from diphtheria were within 2 of the number in the previous week, and included 5 in Glasgow. The 7 fatal cases of whooping-cough were fewer than those recorded in any recent week; 3 occurred in Paisley and 3 in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 98 and 158 in the preceding two weeks, further rose last week to 210, and exceeded by 88 the number in the corresponding week of last year. The causes of 42, or more than 6 per cent., of the deaths in the eight towns last week were not certified.

### HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 23·0 and 24·2 per 1000 in the preceding two weeks, further rose to 31·4 during the week ending Nov. 7th. During the past five weeks of the current quarter the death-rate in the city averaged 25·2 per 1000. The 209 deaths in Dublin during the week under notice showed an increase of 48 upon the number in the previous week, and included 14 which were referred to "fever," 9 to diarrhœa, 2 to scarlet fever, 1 to measles, 1 to whooping-cough, and not one either to small-pox or diphtheria. In all, 27 deaths resulted from these principal zymotic diseases, equal to an annual rate of 4·1 per 1000, the death-rate during the same period being 2·0 in London and 1·4 in Edinburgh. The fatal cases of "fever," which had been 5 and 7 in the preceding two weeks, further rose last week to 14, and exceeded the number recorded in any week since February, 1886. The deaths referred to diarrhœa, which had been 10 and 6 in the previous two weeks, rose again last week to 9. The 2 fatal cases of scarlet fever were the first recorded in the city since the middle of August last; only 4 deaths have been referred to this disease in Dublin since the beginning of the year. The 209 deaths registered in Dublin included 40 of infants under one year of age, and 50 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons showed a marked increase upon those recorded in recent weeks. Five inquest cases and 3 deaths from violence were registered; and 67, or nearly a third, of the deaths occurred in public institutions. The causes of 23, or 11 per cent., of the deaths in the city were not certified.

## THE SERVICES.

ARMY MEDICAL STAFF.—Surgeon-Lieutenant-Colonel Charles Edward Martin Shaw retires on retired pay (dated Nov. 11th, 1891).

NAVAL MEDICAL SERVICE.—The following appointments have been made at the Admiralty:—Staff Surgeons: Henry J. Madders to the *Australia*, and Charles L. Vensey to the *Lion* (dated Nov. 16th, 1891). Surgeons: O W. Andrews, M.B., to the *Ringdove*; Anthony Kidd to the *Vivid*, additional, for Plymouth Hospital; John Moore, M.D., to Plymouth Hospital; Ernest D. Winter to the *Cambridge*; G. E. Kennedy (dated Nov. 13th, 1891), Jerome Barry (dated Nov. 16th, 1891), T. E. Pickthorn (dated Nov. 20th, 1891), and J. L. Bagnall-Oakeley and James M. Rogers (both dated Nov. 21st, 1891), all to the *President*, additional.

MILITIA MEDICAL STAFF.—Argyll and Bute Artillery (Southern Division, Royal Artillery): Surgeon-Major W. Gibson retires; with permission to retain his rank, and to wear the prescribed uniform on his retirement (dated Nov. 11th, 1891).—3rd Battalion, the Duke of Cambridge's Own (Middlesex Regiment): Surgeon-Major J. H. Jephson, M.D., retires; with permission to retain his rank, and to wear the prescribed uniform on his retirement (dated Nov. 11th, 1891).

# Correspondence.

"Audi alteram partem."

## THE FIVE YEARS' COURSE OF STUDY.

*To the Editors of* THE LANCET.

SIRS,—It is disappointing to find that, although the time draws near, no understanding has yet been come to among the licensing bodies in regard to the arrangements for the five years' course of study. Crude and divergent views are put forward, especially in regard to the first and last year of the course. It would seem not to be realised that in the requirements and recommendations of the Medical Council in regard to a five years' course we are on the eve, if not of a revolution, at least of a reconstruction for the beginning of a new era in medical education in the United Kingdom, a reconstruction in which our first duty is to the public and the profession, whatever that may imply to the licensing bodies and the schools. The situation tempts one to come round to the wish for some kind of State examination. Yet, the general scheme for a five years' course put before the licensing bodies by the Medical Council should not be difficult to work out.

There had been for years two prominent demands in connexion with the conditions of entrance to the medical profession: (1) For improvement in previous education, literary and scientific; (2) for more attention to practical work in medicine, surgery, and midwifery. The question how to effect these improvements has engaged the earnest attention of the Medical Council, especially since 1887, and the outcome, after very careful inquiry and very full consideration, was the scheme resolved on last year (June, 1890), to take effect on Jan. 1st, 1892. Put shortly, it is: After an improved preliminary examination in general education, a first year given to that training in physics, biology, and chemistry, without which no one can be regarded as equipped for the intelligent practice of modern medicine, followed by three years of the present medical school and hospital work in an improved form, and concluding with a fifth year devoted entirely to clinical work. The scheme is symmetrical, simple, and ideally a perfect one, and is framed in the interest alike of the public and of the status of the profession. Animated by the same spirit, there need be no difficulty in the examining bodies and the medical schools making their arrangements in accordance with the scheme.

Those who may not at first appreciate the scheme, especially in its first year, I would respectfully ask to look at the reports submitted to the Medical Council in the years referred to, more especially that of May, 1890, on which the scheme was ultimately framed. They contain information also regarding the system of medical education and examination in France and Germany. If any illustration is needed in regard to the proposed first year's work, I may mention that the same is in operation in France, the whole system of medical education in which country it is impossible not to admire, in contrast with ours, with our pestle-and-mortar inheritance and our insular prejudices. After a preliminary examination in school subjects, which throws ours into the shade, the student has, at the end of the first year of the medical curriculum, an examination to pass in "physics, chemistry, and medical natural history" (botany and zoology). What is more for us to think over, if he does not pass that examination he cannot go on to anatomy &c.—he loses the year. That, too, observe, in a four, not a five, years' curriculum. There is no choking, or reducing to a sham, the study of the science subjects by putting in pharmacy and elementary anatomy or histology, as I see variously suggested to be done in our first year.

Some not unnatural alarm seems to be felt that the introduction of physics and biology implies a new burden of lectures to the already over-lectured student. Had that been so I may say that I should have been the very last person to move or support such a proposal in the Medical Council. I could never be a party to inflicting on the student such things as the systematic courses of lectures on botany and zoology known to me in our universities. On the contrary, the Medical Council scheme does not imply attendance on a single lecture on any subject whatever. What is wanted nowadays is not lecture-room or crammed knowledge, but such real knowledge and training in the methods of these sciences as may be obtained by laboratory work combined with private study. It should not be necessary to tell the licensing bodies that at this time of day. In the universities, at least in the teaching universities, the student will no doubt be in for an increased number of lectures and examinations by professors, and not unlikely the five years' course may, in not a few instances, prove to be a six years' course to the university student. The corporations have only to see that the candidate has studied these subjects practically, and to test that by examination. But less than a year, covering the period of a winter and a summer session, cannot reasonably be allowed for that purpose. Had the alternative scheme been selected—that of placing these subjects in the preliminary examination, followed by a four years' course—there would have been the schoolboy knowledge, and examinations, conducted we know not by whom among the some ninety preliminary examinations recognised at home or abroad. By placing these science subjects within the curriculum we secure the right kind of knowledge and training, and our licensing bodies have the examination in their hands. Anyone who will reflect for a moment on what that implies in the way of laboratory work and study will recognise that it must form a good year's work. A carefully prepared syllabus in each of the subjects will be required, in order to guide the student and teacher.

I should be among the last to desire to eliminate anatomy from the first year of the medical curriculum; but to introduce it would be to forget the object of the first year of the new system. The present first year, but cleared of chemistry, will come as nominally the second year. The student will not necessarily be near a medical school. In the words of the resolution of the Medical Council, "the first year may be passed at a university or teaching institution recognised by any of the licensing bodies, where the subjects of physics, chemistry, and biology are taught." The elementary anatomy would have to be very elementary, not more than osteology. I do not mean human osteology, to which, as usually taught in the medical schools, the term "science" cannot by any stretch be applied. But a course of osteology, human and comparative, conducted by an anatomist, is a good training in the methods of biological study; the student is asked to believe nothing that he cannot see, acquires the habit of observation of form and proportion, and gets scientific ideas. Of course I mean, not lectures, but demonstrations, accompanied with objective museum study. That might with advantage go alongside of more general work in the zoological side of biology; but that is a very different thing from the "elementary anatomy" proposed by some to come into the first year.

The resolutions of the Medical Council in regard to the successive examinations are:—

"The examination in the elements of physics (including mechanics), chemistry, and biology should be passed before the beginning of the second winter session."

"Antecedent to the final examination there should be three professional examinations, arranged in such a manner as to secure due continuity and sequence of study."

"All examinations, except the final examination in medicine, surgery, and midwifery, should be passed before the final year intended for clinical work."

"The final examination in medicine, surgery, and midwifery must not be passed before the close of the fifth year of medical study."

In regard to securing the fifth year for clinical work, the Medical Council would have given more help towards that had it seen its way to put "mainly of a clinical and practical nature" before the words medicine and surgery in the two last of these resolutions. The hesitation some members of the Council had in committing the Council to that definition arose from some doubt being started whether such a definition, or any other words than "medicine, surgery, and midwifery," would be in strict accordance with Sections 2 and 3 of the Medical Act, 1886. The doubt seems to me unfounded when the point is looked into. The expression "final" examination does not occur in the Act, nor does that of "qualifying" examination occur in the resolutions of the Council. Without any quibbling, there appears to be nothing in point of law, and there is certainly nothing in principle, to prevent the licensing bodies from examining in the pathology and principles of medicine and surgery at the end of the fourth year, and, finally, in clinical medicine and surgery and in midwifery at the end of the fifth year. A reason urged for leaving midwifery to the final examination is that practical midwifery is most likely to be taken in the fifth year, and that there is not the same scope for a separate clinical examination in midwifery as in medicine and surgery. It would appear, therefore, to be quite open to the licensing bodies to make the final examination a purely practical one in in medicine and surgery with an examination in midwifery, and such an arrangement would undoubtedly tend greatly towards making the fifth year a purely practical one.

In the various schemes suggested from the corporations, proposals occur for a system by three, four, and five examinations respectively, four appearing to be the favourite number, as recommended by the Medical Council. To have five examinations—i.e., an annual examination—would be a symmetrical system, but too many examinations are harassing, tend to make study a mere preparation for examinations, and are otherwise objectionable. There would be a great deal to be said for having only three examinations were it not for the endeavour to secure the fifth year for only practical work. The result of multiplying examinations is, in my experience, to lead to cramming. There is much less of a certain kind of grinding now than there was forty years ago, since more practical methods of examination have been introduced, but there is more cramming. The possible subdivision of the present second and third examinations into parts—a very recent innovation—has especially promoted cramming, and that in subjects for which it can be least defended. When the whole examination took place in one day at the end of the four years, as at the College of Surgeons in my student days (there was no College of Physicians examining then), cramming was of no particular use. The examination tested the knowledge the candidate was to carry with him into the profession, and there is much to be said for a final examination of that kind, best conducted, perhaps, by the State. If examination in everything but practice is not over before the fifth year, it is greatly to be feared that the fifth year will not prove to be the purely practical year we hope for; and if that is found to be the case by those with whom these matters will rest five or six years hence, it will probably be best to go back to three examinations, leaving everything connected with disease to the final examination, and giving the student alternate years of quiet to pursue and digest his work. Meantime it would appear that we must start the new system with four examinations.

As to the suggested arrangement of the subjects, I see anatomy occurs at least twice in all the schemes referred to, and that there are very divergent views as to materia medica, except that therapeutics should come in with

practice of medicine. The best way of dealing with materia medica would seem to be, in adaptation to the peculiarities of each division of the kingdom, to leave it in the option of the candidate to take it either at the second or at the third examination, excluding therapeutics as to come with practice of medicine. Anatomy and physiology should be inseparable, and if these were taken at the end of the winter session of the third year (the second year for them), that would, as now, be at the middle of the whole course, and would leave two and a half years for subjects belonging to practice. The student would, of course, be attending hospital practice from the second year. I would then, under the five years' system, see no particular advantage in having a preceding examination in elementary anatomy. The chief consideration for anatomy is that there must be time for dissection; that is a thing that will not hurry or cram. Modern materia medica and pathology appear to me to come in naturally after anatomy and physiology. Allowing candidates to enter for the medicine, surgery, or midwifery of the final examination separately is of very questionable propriety, although exemption from re-examination in any one or two of these in which a satisfactory appearance has been made may be allowable.

In view of the foregoing considerations, and with the endeavour to do the best to carry out the purposes of the Medical Council in the five years' course, I would respectfully submit to the consideration of the corporations the following scheme, arranged as four examinations:—

*First Examination*: Physics, elementary biology, and chemistry. At end of first year, but allowing the subjects to be taken two and two, as at end of winter and summer sessions, or at any examination period, as soon as the required study in the subject has been completed. The area of the examination in each of these subjects to be defined in a syllabus.

*Second Examination*.—Anatomy and physiology, at end of winter session of third year. Materia medica (excluding therapeutics), at the option of the candidate at this or the next examination. (An examination at the end of the second year is not necessary, but if desired it would be in elementary anatomy, including histology.)

*Third Examination*.—Medical and surgical pathology (or pathology and principles of medicine and surgery). Materia medica, if not taken in the second examination.

*Final Examination*.—Practice of medicine and surgery; midwifery and diseases peculiar to women and new-born children (or the midwifery &c. might, at the option of the candidate, be taken with the third examination). Practice of medicine understood to include therapeutics and hygiene; surgery understood to include ophthalmic and other branches of surgery; medicine, surgery, and midwifery to include questions in the departments of forensic medicine belonging to each; vaccination understood to be included.

As the examination regulations soon to be issued by the corporations in each division of the kingdom will practically determine the system of medical education for a long time to come, and as uniformity, or some approach to uniformity, is desirable, I venture to suggest that some conference might take place of representatives of these authorities with that view. The time of the meeting of the Medical Council in the end of the month, when members of each of the corporations of Scotland and Ireland will be in London, offers a convenient opportunity. There could at least be an exchange of views, and some understanding arrived at. I would also suggest that the commencement of the five-year system is a favourable time for reconsidering the kind of instruction to be required. Are we not ready for some change in the nature of all the courses, a change by which there would be less lecturing and more laboratory and other practical work, by which lectures would be confined as much as possible to what is demonstrable and experimental, excluding what can be done as well, or better done, by private study accompanying practical work? Would it not be well to eliminate from the regulations the word "lectures," as misdirecting both the teacher and the student, and to substitute for it the terms "demonstrations" or "meetings," and to have the practical courses the compulsory ones? Here, again, we may learn from the French. The practical courses in the various subjects are compulsory, and attendance on them is carefully ascertained. There are strict rules for enforcing hospital work during the last two of the four years' course, the morning, up to noon, being given to hospital work. All the lectures and practical courses are held in the afternoon, generally between the hours of 2 and 6, except those in natural history and practical chemistry, which are attended in the first year of study. The lectures are in no course given oftener than thrice a week, and attendance on all lectures is entirely voluntary.

Then as to the method of conducting the examinations. The platitude that education is the important thing to be aimed at, not examination, is true enough in a sense; but examinations, their periods and their method, are the great determining power in medical education, and always will be, more and more. If we wish to have a good system of education we must have well-placed examinations and right methods of conducting them. If we wish to have practical education we must have practical methods of examination. It appears to me that in this country far too much importance is assigned to the written part of the examinations, and too little time given to the oral and practical parts. There used to be no written examination at the College of Surgeons, and it was introduced in Edinburgh University only in 1845. Here, again, the French are before us. Even in the preliminary examination in general education the examination is in part oral, and there is, as far as I could see or learn, no written examination in the medical subjects, but the oral and practical examinations are searching, and the last part of the final examination is essentially clinical. Of all the multitude of candidates who have passed through my hands these forty years or more, their fate has been determined by the oral and practical part of the examination. The only use I see in the written examination is to eliminate the few to whom to give an oral examination would manifestly be a waste of the examiners' time. It would be well were all the examining boards in this country to at least shorten and give less weight to the written part, and to extend the oral and the practical parts of their examinations.

I am, Sirs, yours faithfully,

Edinburgh, Nov. 9th, 1891. JOHN STRUTHERS.

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## "THE ELECTION OF DIRECT REPRESENTATIVES."

*To the Editors of* THE LANCET.

SIRS,—We might perhaps be almost excused if we thought it wiser to pass unnoticed the letter of Mr. Bateman, hon. sec. to the Medical Defence Union, published in THE LANCET of Nov. 7th. Indeed, I am doubtful whether it might not show a quieter dignity to pass silently the uncalled-for remarks of our irate brother; but it is a very large constituency that we have to contest, and to a very large number we must, therefore, be entirely or almost entirely unknown. At the time Mr. Bateman's letter was written, the only two candidates in the field for election as direct medical representatives in the General Medical Council were (and probably still are) Mr. George Brown and myself, both of us holding representative positions in the profession to which we have the privilege to belong, and both of us are members of the Medical Defence Union, the former a member of its Council, and both of us contested the present election of direct representatives on the General Medical Council by the request of a large number of our brother general practitioners; therefore to refer or to allude to us as "American cranks" is as ungenerous as it is false and damaging to the cause he is desirous of serving. Our only "fad" is an earnest desire to improve the status of those who practise medicine and surgery, and especially as general practitioners, and to attempt more successfully in the future to help to administer the intentions of the Medical Act—i.e., for the better protection of the public, and for the easier distinction of the qualified from the unqualified practitioner, so that registered medical practitioners may righteously reap the reward of their labours, and to keep the paths of the profession as far as possible clear from the charlatan, the ignorant, the immoral, and the unworthy; if these aims be "fads," we accept the impeachment. We will not inflict ourselves either on the profession or on the General Medical Council. Should we be fortunately successful, we should go to the Council by the deliberate selection of those whose daily duties have been as our own, and who believe we can best represent them in what I will still call our Medical Parliament. We, too, affirm with confidence that we shall not damage by a hair's breadth the great cause of Direct Representation, for we feel that we know by personal experience the actual and not the "fanciful" imaginary wants of the great body of the profession, the general practitioners of the present day, in contradistinction of those of a remoter age of thirty or forty years ago, when there were no dispensaries and hospital relief limited for accidents and the poor. And we trust and think, by careful study of the interests of the

profession, we shall find and keep intact the larger interests of the greater public. I am, Sirs, yours truly,

Nov. 9th, 1891. FREDERICK H. ALDERSON, M.D.

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*To the Editors of* THE LANCET.

SIRS,—Whether we be a small section of the profession or not, I protest against the statement by Mr. Wheelhouse, Sir W. Foster, and Dr. Glover that we "resist such a minimum amount of training in midwives as would enable them to know when to send for a doctor." It is not so. We resist the granting of diplomas to midwives recognising them as competent to attend all ordinary labours *without a doctor*, and to judge when the case becomes too dangerous for their skill to conduct. We know that their training is never likely to make them fit for such responsibilities, nor their self-confidence likely to be small enough to avoid disaster. We would wish them to receive the highest possible training *as nurses*. Already our certificated midwives advertise in the evening papers the address at which they may be "privately consulted." When they get State diplomas (which God forbid!) they will know too much to send for a doctor. We are continually called to confinements conducted by midwives because the child is born dead, or the mother injured or in fever, and in by far the greater number of cases our fee is then paid without difficulty. It is not poverty that prevents the engagement of a doctor. Midwives claim to be fully competent to manage labour, and delude the ignorant. Will the possession of diplomas diminish their presumption?

I am, Sirs, yours faithfully,

Highgate, Nov. 9th, 1891. HUGH WOODS.

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*To the Editors of* THE LANCET.

SIRS,—Those who are in favour of the better education and legal registration of midwives must be much satisfied with the answer given upon this subject to Drs. Rentoul and Woods by the direct representatives of the General Medical Council. They recognise the "awful evils" of the existing system of midwives' practice, and "hold it to be the highest indiscretion to represent the interests of the profession as inconsistent with any *reasonable* legislation for the abatement of these evils." This is a most satisfactory statement, and will doubtless have the effect of securing to the present representatives the votes of the larger proportion of the members of those medical bodies which have considered the subject and decided in favour of legal registration. I am, Sirs, faithfully yours,

JAMES H. AVELING.

Upper Wimpole-street, W., Nov. 9th, 1891.

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## THE MEDICAL DEFENCE UNION AND THE COMING ELECTION.

*To the Editors of* THE LANCET.

SIRS,—Mr. A. G. Bateman, in your issue of the 7th inst., writing as hon. secretary of the Medical Defence Union, expresses his views regarding the candidature of Dr. Alderson and myself in terms forcible rather than polite. Had he addressed your readers as a private individual, I should not have noticed his attack, for nothing can be gained by carrying on a discussion with one who commences hostilities by calling those who have incurred his displeasure opprobrious names. But I must ask your permission to allow me to inform your readers that Mr. Bateman has no authority to speak for the Medical Defence Union. In a letter received by me a few days ago from our president, Mr. Lawson Tait, he wrote that it is his desire that no steps should be taken which would make it appear even *in the faintest way* that the Medical Defence Union is going to interest itself in such matters as the election of direct representatives. As long as your readers understand that Mr. Bateman has no authority to speak for others, he is at liberty to express his views *re* my candidature in whatever terms please him without remonstrance from

Yours faithfully,

GEORGE BROWN,
Member of the Council, Medical Defence Union

Threadneedle-street, E.C., Nov. 10th, 1891.

## A REPRESENTATIVE FROM WALES ON THE GENERAL MEDICAL COUNCIL.

*To the Editors of* THE LANCET.

SIRS,—I think we may safely conclude that the result of the present agitation in regard to the General Medical Council will be an increase in the number of direct representatives of the profession, and it has occurred to me that the time is now opportune for us, the members of the medical profession in Wales, to consider whether it will not be desirable to combine to secure for ourselves and from ourselves a representative on the Council. To me it seems eminently desirable that we should have watching over our interests someone in close touch and in direct sympathy with ourselves—someone intimately acquainted with the country and its wants, and with the general condition of medical practice in our midst. I feel quite sure the services of such a representative, when any matters concerning Wales cropped up for discussion, would be of advantage to the Council and would be greatly appreciated by its members. Apart from this, there is the important question of medical education in our Welsh colleges. We are on the eve of a practical realisation of a scheme for the education of medical students in one of our Welsh colleges, and as this scheme must, in the first instance, be submitted for the consideration of the General Medical Council, it would be an inestimable advantage if we had a Welsh representative to pilot it through this preliminary course. Wales in the past has been somewhat dormant in the matter of education, but with its fresh machinery—none, perhaps, more perfect in the world—we hope for progress, and we trust to find medical education in the van. In order to achieve this end, an essential condition in my opinion is the presence on the General Medical Council of an enthusiastic and devoted representative from the ranks of the profession in Wales. I shall be glad if those gentlemen who consider my suggestion worthy of support will kindly intimate the same to me at their earliest convenience. I am, Sirs, yours truly,

Cardiff, Nov. 10th, 1891. P. RHYS GRIFFITHS.

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## "ACUTE RHEUMATISM AND THE TEMPORO-MAXILLARY JOINT."

*To the Editors of* THE LANCET.

SIRS,—In the issue of Oct. 24th of your valuable journal I have read what is doubtless of great interest to many of your readers, as well as being of special interest to myself from the great number of rheumatic cases I have seen in Bath, particularly in the Royal Mineral Water Hospital. This is an account of a case of acute rheumatism confined to the temporo-maxillary joint, reported by Dr. Gallipe in *Le Progrès Dentaire*. Such a case is so very unusual as to suggest doubts as to the correctness of the diagnosis. Much as I welcome any discussion which would tend to throw light upon the subject, I fear this is a wrong departure; still, it must be welcomed as leading to the ventilation of a matter which is only now emerging from chaos into cosmos, a subject which ought to be better understood, and which will before long, I trust, be understood as it ought, owing to the great interest it must possess to a large and increasing number of mankind who are sufferers from it. No, the only connexion which is in my mind allowable is between affection of this joint and rheumatoid arthritis—a disease long allied with rheumatism, and even yet connected to it by links stronger than ought to exist. Rheumatoid arthritis is an arthritis owing its origin to debility, that debilitating cause being unknown, but occurring always in cases with strong strumous or phthisical tendency, and very often with hereditary history of gout, but never with rheumatism, beyond an accidental connexion which may occur during the lifetime of the individual, and in which case the ravages of both diseases can be distinctly and separately traced. But there is an arthritis, first described in a work published by myself in conjunction with Dr. C. T. Griffiths, which follows rheumatism and is distinctly a rheumatic disease, possessing positive and incontestable features of its own, features strong and distinct enough to justify us, without assuming undue dogmatism, in placing them under two separate headings.

Rheumatic arthritis is an arthritis which follows an attack

of acute or subacute rheumatism, whether gradually merging into the arthritis or happening some considerable time before the joint trouble has been manifest. This also is a disease occasioned by debility, but the debilitating cause is unquestionably rheumatism. The more these diseases are studied the more widely they differ in every way, and in the table of differences quoted at the end of the "Rheumatic Diseases so-called," under heading No. 4 of rheumatoid arthritis, will be seen: "Joints most used are the first affected; smaller joints first, running centripetally; temporo-maxillary joints often affected; symmetry of joints affected, more noticeable." While under heading No. 4 of rheumatic arthritis we read: "Large joints often first affected, running centrifugally, and chiefly joints affected that were attacked in previous acute rheumatism: temporo-maxillary joints never affected; not so often symmetrical." With regard to this joint, I would remark, that I am now quite in the habit of looking upon the disease as diagnosed with a comparative degree of safety by terming it "rheumatoid arthritis," should the temporo-maxillary joint be at all affected. It is found when the disease is proved to be absent that the temporo-maxillary articulation is never implicated; and I have often noticed that this joint has been much affected when others have been comparatively free. Taking frequency of movement of joints, or over-use of joints, the temporo-maxillary articulation is a good example; everyone must eat and speak, therefore this joint can never enjoy a lengthened period of rest. This is a strong point in our case, that the special joints affected in rheumatoid arthritis are determined by the particular nature of the occupation, the joints subject to most wear and tear being the first to go. Thus the upper extremities in women are most likely to be the seat of the disease, while the lower in men are more exposed to wet and cold. I would also find fault with the nomenclature in terming the inflammation of the alveolo-dental membrane 'rheumatic periodontitis." The tendency in diagnosis is to tabulate—a useful one, no doubt, for teaching purposes, but, on the other hand, an easy error to slip into, for the complications of rheumatism, such as rheumatic iritis and rheumatic periostitis, do not seem to be so prevalent as the text-books would have us believe, for out of upwards of 4000 cases of rheumatism in all its forms only about five cases of rheumatic iritis came under my notice, while rheumatic periostitis has been even more rarely seen than that. Young adults have certainly complained of aching of the bones at night, but this has not been attended by any of the usual symptoms of periostitis sufficiently to warrant a diagnosis of periostitis being given. In three of the five cases of rheumatic iritis there was a more or less genuine history of specific mischief, so that must be allowed for. The only connexion that must be borne in mind is between the temporo-maxillary joint and rheumatoid arthritis. Here there is a connexion of great diagnostic value, for when the question of treatment steps in, success entirely depends upon clear discrimination between these diseases.

I am, Sirs, yours truly,

HUGH LANE,

Surgeon to the Royal Mineral Water Hospital, Bath; Hon. Medical Officer to the Royal United Hospital, Bath.

The Circus, Bath, Oct. 31st, 1891.

## "OF WHAT DID SHAKESPEARE DIE?"

*To the Editors of* THE LANCET.

SIRS,—In the article under the above heading in your issue of the 7th inst. you quote freely from and appear to accept the conclusion arrived at by the editor of the *New York Medical Record*, that Shakespeare died of pneumonia. This conclusion your contemporary arrives at by shutting his eyes to some very important evidence, and his sole grounds for the decision rest on Ward's Diary. "The Diary of the Rev. John Ward, Vicar of Stratford-upon-Avon," was, about the year 1840, discovered in the library of the Medical Society of London. It covers the period of time from 1648 to 1679, the period in which Shakespeare enjoyed his leisure and died. Now, what does the Rev. John Ward say of the poet. "I have heard," he writes, "that Mr. Shakespeare was a natural wit, without any art at all; he frequented the plays all his younger time, but in his elder days lived at Stratford, and supplied the stage with two plays every year: and for it had an allowance so large that he spent at the rate of £1000 a year, as I have heard," showing that Ward had his information secondhand. The same absence of personal acquaintance appears again in the second notice. "Shakespeare, Drayton, and Ben. Jonson had a merry meeting; and, it seems, drank too hard, for Shakespeare died of a fever there contracted." Starting with the above quotation, and remembering that Shakespeare died in April at a comparatively early age, we are asked to believe that the cause of death was pneumonia, and no account whatever is taken of a much more important witness—Dr. Hall. In 1607 Susanna, the eldest daughter of Shakespeare, was married to Dr. Hall of Stratford, by whom, in 1608, she had a daughter, Elizabeth; and in the same year Shakespeare's mother died. The marriage, the birth of his grandchild, and the death of his mother all within a year must have thrown Dr. Hall and Shakespeare very much together, and it is reasonable to suppose that if Dr. Hall was not conversant with the medical history of Shakespeare his father-in-law would instruct him. Now in 1657 a Mr. James Cooke, who had become possessed of Dr. Hall's patients' book, published the book and its formulæ, from which, according to Mr. James F. Nisbet in his work, "The Insanity of Genius," he concludes that Shakespeare died of paralysis.

I bring the question before your readers because I think the data given in the *New York Medical Record* are, to say the least, insufficient to justify the conclusion. If space permitted I would also bring testimony to show that the term "peri-pneumonia" was almost unknown in Elizabethan medical literature, pulmonary affections being almost without exception described as pleurisies up to the time of Sydenham.

I am, Sirs, yours truly,

Cavendish-row, Dublin, Nov. 1891. GEORGE FOY.

## "THE OPERATION OF COMBINED PYLOREC TOMY AND GASTRO-ENTEROSTOMY."

*To the Editors of* THE LANCET.

SIRS,—I regret to find by Mr. Greig Smith's letter on the above subject that he appears to feel aggrieved that I have not acknowledged his case of combined pylorectomy and gastro-enterostomy in your columns, and that he should imply that I had acted in a discourteous manner to him by not having done so. This, I need scarcely say, was very far from my intention, as I shall show. It is quite correct that Mr. Greig Smith did write to me on Oct. 24th, and mentioned that he had performed the operation referred to unsuccessfully about a year ago, that he had shown the specimen at a local society, and that the case is mentioned and described shortly in the forthcoming fourth edition of his work on Abdominal Surgery. He did not, however, mention that the case had been in print for five months. He further said: "You may think it right to correct your sentence in THE LANCET." To this letter I immediately replied that the case was about to be published elsewhere, when I would mention his case and give him the credit of priority he desired, and I would gladly write to THE LANCET as he suggested, if he wished me to do so. As I received no answer to this letter, I concluded he did not wish me to write, but was satisfied with my mentioning his case, as I suggested. The case is now recorded in my forthcoming article much as he described it in his letter to me, and will appear, I believe, this week in a contemporary. It will, I think, then, be clear that the onus of my not having corrected my sentence by writing to THE LANCET rests with Mr. Greig Smith, and not with me. It will be seen by Mr. Nicholson's letter on the same subject that neither Mr. Greig Smith nor myself has any claim to being the first to perform the operation in this country, and I am sorry Dr. Lowson did not publish his case, so that I might have accorded to him the honour which I believe belongs to him. I am also glad to have learnt of it sufficiently early to be able to give him the credit which is due to him in my paper on the subject above referred to.—I am, Sirs, yours faithfully,

Upper Wimpole-street, Nov. 7th, 1891. FRED. B. JESSETT.

*To the Editors of* THE LANCET.

SIRS,—In reference to Mr. Jessett's interesting paper on the above subject, it may perhaps be worth while to mention that the six cases which he refers to are not the only ones in which pylorectomy has been done in England. It may

also be of interest to Mr. Jessett and others to know that the method of excising the pylorus and suturing the divided ends of the stomach and duodenum together after the method practised on the Continent has not been uniformly fatal within twenty-four hours, as Mr. Jessett states. I have myself performed pylorectomy by this method on two occasions; once successfully so far as the operation was concerned, the patient living for three months afterwards; once unsuccessfully, the patient dying on the fourth day from exhaustion. With due care the operation need occupy no longer than Mr. Jessett appeared to require for his double operation, which occupied one hour and forty minutes; as my first operation occupied one hour and a quarter, my second an hour and a half. I hope to give a report of my cases shortly before one of the London Societies.

I am, Sirs, yours faithfully,

Leeds, Nov. 10th, 1891. A. W. MAYO ROBSON.

## "CONDITION OF THE HEART IN DEBILITY."

*To the Editors of* THE LANCET.

SIRS,—I am much obliged to Dr. Handford for his courteous letter which appeared in your issue of Nov. 7th, wherein he compares a paper[1] of mine, bearing the above title, with some statements of his in a paper in the *International Journal of the Medical Sciences* for December, 1890. As to two of these which he quotes in his letter—viz., the "dilatation affecting chiefly the right side," and the "hæmic murmur varying greatly with position, sometimes only appearing in the supine"—they are taught with great clearness and ability by Dr. William Russell in that most suggestive book of his, "Investigations into some Morbid Cardiac Conditions," the preface to which bears date November, 1885, a book which, it seems to me, has not had sufficient prominence given to it. Ever since I read Dr. Russell's work in 1886 I have persistently taught these views of his. Lengthening experience has enabled me to fully confirm their truth. Regarding Dr. Handford's third point, the causation of the pulmonary murmur, I cannot subscribe to the importance he attributes to the force of gravity. I have often percussed patients in the supine and the erect position, but have been unable to determine any definite variation in the range of the vertical dulness. Moreover, it is by no means all pulmonary murmurs which increase in loudness or area of audition on the patient being placed supine. Dr. Handford's further suggestion that the "base beat" may help to produce the murmur is probably a true one; but we must not forget that the "base beat" is not a pathological condition; the murmur is. In my paper I have endeavoured to give six other mutually adjuvant causes; but it is my belief that the causation is a very complex one, and that probably many others besides these enter into it.

I wrote my thesis especially to point out that: 1. "The area of the superficial cardiac dulness is in debility characteristic, and is the most valuable of all the signs which enable us to diagnose debility from organic disease." 2. This characteristic dulness is due to a correspondingly characteristic dilatation of the right ventricle, which differs greatly in form from that occurring with left-sided organic disease. 3. This characteristic dilatation arises from the fact that the right ventricle enlarges without, at any rate in the first instance, any accompanying dilatation of the left. 4. This primary dilatation of the right ventricle is what we should expect *à priori*. 5. This characteristic dilatation is the fundamental cause of the pulmonary murmur, and explains its general absence in dilatation of the right ventricle in cases of organic disease of the left heart [where dilatation of the right ventricle is nearly always secondary to that of the left].

I am, Sirs, yours truly,

ARTHUR FOXWELL, M.A., M.D., M.R.C.P.,
Nov. 10th, 1891. Physician to the Queen's Hospital, Birmingham.

## THE ETIOLOGY OF INFLUENZA.

*To the Editors of* THE LANCET.

SIRS,—THE LANCET of Nov. 7th contains an interesting letter on the etiology of influenza by Dr. Fitzgerald, which contains a courteous reference to myself, in which I am credited with the recommendation of prophylactic treatment for that disease. I ask you to allow me, in justice to the author of that method of treatment, to disclaim any merit in connexion with it, and, in justice to myself, to disavow any belief in its efficacy. Dr. Fitzgerald says: "I see Dr. Sisley recommends the application of a solution of boric acid as a prophylactic measure in influenza." The writer, I imagine, has made this statement from an interpretation he put upon a paragraph in a paper which I read before the International Congress of Hygiene and Demography. What I really said was this: "Dr. Bezly Thorne recommended that the eyes of people exposed to infection should be bathed with a solution of boric acid, and found that none of those who adopted that practice suffered from the disease. A precaution so simple, founded on a scientific theory, and devoid of danger, merits perhaps more general adoption than it obtained during the last epidemic." The treatment was recommended by Dr. Thorne in THE LANCET for Jan. 18th, 1890, and it is only fair that he should have any credit which he alone merits in connexion with it. I neither have recommended nor do I recommend the treatment, and am sorry that any words of mine have received that interpretation. In mentioning what means had been suggested for the prevention of the spread of influenza I thought it right to mention this one. No one can deny that it is a simple one. It is also founded on a scientific theory. The theory is that the poison of influenza is absorbed by the conjunctivæ—I do not myself accept that theory. The treatment is devoid of danger to the patient. To put the matter briefly, if it does no good, it will do no harm. That is, in plain English, what I wished to say, and if my expression of that belief was stated with undue ambiguity, I have only to say that the phraseology I first adopted appeared to me to be more polite and not less clear.

I am, Sirs, yours truly,

York-street, Portman-sq., Nov. 9th, 1891. RICHARD SISLEY.

## LESIONS OF THE PRE-FRONTAL LOBES AS A CAUSE OF MOTOR SYMPTOMS ON THE SAME SIDE.

*To the Editors of* THE LANCET.

SIRS,—Several cases have been lately recorded in which an injury to one frontal region was followed by motor symptoms limited to the same side, or commencing there. In a case I recorded in THE LANCET of Sept. 5th there developed, after a destructive lesion of the left frontal lobe, well-marked ankle-clonus, with excessive knee-jerk and a feeling of weakness in the left leg, and these symptoms were present several months afterwards. Whether there was slight weakness of the left hand and arm would be difficult to detect in a right-handed man. In Mr. Watson Cheyne's case, recorded in THE LANCET of Oct. 24th, an irritative lesion of the frontal lobe was the cause of an epileptic fit, in which the convulsions commenced on the side of the brain lesion; post-epileptic paralysis of a temporary nature followed the removal of the irritation, which had set up a hyper-physiological state of certain cells in the pre-frontal lobe. Professor I. Tansini of Modena has recently recorded the case of a girl aged eleven years suffering from traumatic epilepsy—not simply epileptiform convulsions—in which he hesitated to trephine over the scar in the frontal region because the attacks commenced on the same side as the lesion, until Dr. G. Bruni explained this by the fact that the frontal lobe is the starting point of the bundle of fibres of the corona radiata, which after uniting with those of the other side in the anterior segment of the internal capsule undergo a double decussation, so as to run into the spinal cord on the same side as they started from. Dr. Bruni's localisation of the lesion was proved to be correct by a cure following the operation. These cases show that unless there is some objective symptom, such as a scar or a tender place on percussion of the skull, localisation of the lesion in epileptic fits as distinguished from epileptiform ones must be extremely difficult. An epileptic fit may be due to a lesion of the frontal lobe on the same side as the initial spasm—if the above cases prove anything,—or it may be due to one in the Rolandic region on the opposite side to the initial spasm; in the latter case the commencement of the fit is truly epileptiform in nature; and if it is limited to this form localisation is easy; but if the

[1] THE LANCET, Oct. 24th, 1891.

lesion acts as a detonator and discharges collateral stable cells situated in the highest motor centres (Hughlings Jackson) or pre-frontal lobes, we have a true epileptic fit differing from the one caused by a pre-frontal lesion, in that the motor symptoms commence on the opposite side of the body in the former and on the same side as the lesion in the latter. Is there any symptom which would aid us in distinguishing these two kinds of fits? Do the head and eyes undergo conjugate deviation away from the side of the lesion and of the initial spasm, and in this way differ from a fit due to a lesion in the Rolandic area, when the head and eyes deviate towards the side primarily convulsed? The difference in intensity of optic neuritis, if present in both eyes, does not appear to be yet of any certain localising value. I hope some expert neurologist will kindly throw some light on the points I have raised, for although the pre frontal region is not experimentally excitable, there seems to be every reason to believe that a lesion of this region may give rise to a "physiological fulminate" or an "epileptogenous focus," the motor symptoms first showing themselves on the same side as the lesion. I am, Sirs, yours truly,

Alresford, Hants, Oct. 26th, 1891. F. W. JOLLYE.

## THE USE OF ANTISEPTICS.

*To the Editors of* THE LANCET.

SIRS,—In reference to the recent letters on the "Use of Antiseptics," would you kindly insert a few remarks which may tend to show that the views of the modern antiseptarian and those of the disciple of "scrupulous cleanliness" are really not so diametrically opposed as the enthusiastic representative of either side might at first lead one to believe? Glancing at a list of our so-called antiseptics, it will at once be seen that their activity and efficiency increase directly with their known detrimental effect over the healthy reaction of the living tissues. A recognition of this injurious influence was doubtless what led to the antiseptic spray being originally condemned as deleterious by Mr. Lawson Tait and Dr. Bantock, and its final abolition by the inventor himself. Now the modern antiseptarian does not profess to see in antiseptics any peculiar intrinsic virtue, being fully aware of their injurious effect on the vitality of the tissues, as well as their germicidal power. He tries to avail himself of the latter property with the least possible sacrifice to the former; he uses them intelligently as a means to achieve an end, that end being asepticity. Further, it is obvious that in the intelligent use of antiseptics we have the readiest means of rendering our hands and instruments approximately aseptic during surgical manipulations; but as to the direct application of powerful germicides to absorbent surfaces, which formerly was much in vogue, from what I have above stated it follows that such a practice would be extremely injudicious, quite opposed to modern teaching, and would by lowering the vitality of the tissues render them more susceptible to the entrance and growth of septic or pathogenic micro-organisms. Doubtless this too diligent use, or rather abuse, of antiseptics has in a great measure to account for the sweeping assertions recently put forward respecting their applicability, and led up to their condemnation and abolition in some quarters. Thus, although the reckless and meaningless use of such potent agents must be deprecated, still care must be taken lest the pendulum in swinging to rest may go too far in the opposite extreme, affording us an illustration (unfortunately not the first one in surgical literature) of the old proverb, "Ab Scylla in Charybdim." Now, the modern antiseptarian is far from being opposed to scrupulous cleanliness; in it he recognises an approximation to his ideal asepticity, and only differs from the advocates of the former in the fact that he believes this much-desired condition more readily attainable through the regulated use of antiseptics. Thus, on analysis, the broad principles underlying the actions of both are found to be identically the same, a slight divergence being caused merely by the means adopted to secure the end; and possibly with the discovery of a reliable non-decomposable and non-poisonous antiseptic, a desideratum still keenly felt, the distinction between the advocate of "scrupulous cleanliness" and the modern antiseptarian may cease to exist.

I am, Sirs, yours faithfully,

Galway, Oct. 17th, 1891. LOUIS C. BUNTON, M.B.

## BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

*Midland Medical Society.*

THE annual meeting of this Society was held in the Medical Institute on the 11th inst., under the presidency of Mr. Bennett May. The address was given by Dr. James Little of Dublin, on the Resources of the Physician in the Management of Chronic Disease of the Heart. A large and appreciative audience listened to an extremely able and practical discourse, in which the experience of the lecturer was given. A vote of thanks, moved by Sir Walter Foster, and seconded by Dr. A. S. Underhill, was cordially carried. A new departure was made in the Society's proceedings this year, there being no supper following the address as heretofore, and the meeting therefore being held at the Medical Institute instead of at an hotel, a change which appeared to meet with the approval of the members, judging from the numbers present.

*Margarine as Butter.*

A tradesman was lately fined 40*s.* and costs for selling margarine as butter. This common practice will probably receive a useful check by this fine, but the infliction of a fine only does not appear to diminish the number of cases which crop up in this direction. It is much like the smoke nuisances which so constantly arise, and where a small fine now and again is taken no notice of by manufacturers, who exhibit no interest in the matter, and certainly adopt no steps to abate it.

*Orthopædic and Spinal Hospital.*

The annual meeting of this charity was held on the 6th inst. The Marquis of Hertford presided. The report showed that the expenditure for the year was £1555 9*s.* 3*d.*, and the income £1359 1*s.* 3*d*, leaving a deficiency of £196 8*s.* There were cases still waiting to be admitted: some had been waiting for months, showing the want of increased accommodation. An intimation was given of a legacy by the late Mr. Avins, which will probably amount to £22,000, the receipt of which in due time will materially add to the prosperity of the hospital, which is now doing a great and valuable amount of good among the poorer classes of the city and surrounding district.

*Centralisation of Hospital Administration.*

Attention has been called to this subject by a letter in the *Birmingham Daily Gazette*, and a proposal is made to centralise and consolidate our local medical institutions. It is pointed out that there are two general and six special hospitals in the city, the work of which overlaps that of the others to a greater or less extent. The advantages referred to are: (1) finance and administrative economy; (2) uniformity of management; (3) greater facility and effectiveness in the introduction of measures of reform; (4) improvement in the status of the smaller hospitals; (5) simplification and greatly increased efficiency of the arrangements for education of medical students. At the least, it is suggested, for the sake of the Medical School, that the General and Queen's Hospitals should be amalgamated. The latter suggestion bears the impress of practicability, and no doubt would result in considerable advantage to all concerned. The former part of the plan appears, from the present standpoint, impossible of accomplishment; but as a dream of the future it is worthy of reflection and ultimate elaboration. Whether it will be met by the vigour and determination necessary to its realisation remains to be seen. Our public men at this time are too much absorbed in work to battle with the gigantic development which would accompany the details of such a scheme.

Birmingham, Nov. 12th.

## NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

*Newcastle.*

THE chief constable of Newcastle, Captain Nicholls, in his annual report, accounts for the large increase of cases of drunkenness by the prosperous condition of the working classes in this very populous district, of which Newcastle is the principal market. He remarks that the only district in

which a decrease of drunkenness has been noted is one in which there has been a closure of many low public-houses and beer-shops. Captain Nicholls thinks that the "long bar" traffic in intoxicating drinks which is extending through the district calls for careful attention, as it has such a tendency to encourage the consumption of a large quantity of spirits in a comparatively short space of time—a habit which experienced policemen affirm accounts for so many persons of both sexes being found in an incapable state in the public streets, into which they are ejected so soon as the first symptoms of intoxication are observed.—The financial condition of the Royal Infirmary is giving much concern to its governors and friends. At the last court a deficiency or over-draft of nearly £5000 was announced. It was stated that the number of patients treated was very much greater than formerly, and the operations were heavier and more costly. Not long ago the nurses numbered eleven; now they were fifty, and they were worked very hard. It was instanced that a case of ovariotomy required two nurses—one for night and one for day duty. Operations were now safely performed which it would have been considered manslaughter to have done at all at one time.—Saturday last was the day on which the usual collection for the infirmary and other medical charities was appointed to take place at our workshops and factories. It was rather unfortunate that a large number of men were walking about the streets in consequence of the strike of engineers—now happily settled,—and this would of course have an adverse influence on the amount.—Dr. Bowlan, who has served for two years and a half as house surgeon to the Newcastle Union Hospital, has been appointed to a similar post in the St. George's-in-the-East Infirmary, London. He was the recipient the other day of a testimonial as a mark of the esteem in which he was held by the officers of the Union to the number of about thirty. Mr. Dodd, the senior surgeon, presided, and the Rev. T. Averell, the chaplain, in making the presentation of a handsome dressing-case, said that "a more genuine token of respect and good feeling was never bestowed upon a public officer."

*Sunderland.*

Mr. Hopgood, in opening a bazaar in aid of the new Eye Infirmary at Sunderland last week, mentioned that few people were perhaps aware that Sunderland possessed an Eye Infirmary, and still fewer that its foundation dated back fifty years. It was not until 1881 that the present institution came into notice. Eighteen years ago their patients numbered 300, while a year ago 1500 were treated. The new building, which was in course of erection, would accommodate fourteen beds, and provision had been made for extension if deemed necessary. "Several handsome donations had been received, but £1000 was still necessary." I venture to say that this will soon be forthcoming in a town with the public charitable spirit of Sunderland.

*The Sunderland Death-rate.*

The late high death-rate recorded for Sunderland has been the subject of much discussion in the Town Council, and the report of the medical officer of health (Mr. A. E. Harris) has drawn attention to the sanitary evils in the borough in a forcible manner. It appears that the town stands on a small area when its population is taken into account, and that it abounds with tenements of the worst description. It was mentioned in a discussion on the matter in the Town Council, as showing this overcrowding, that Nottingham, which had always a very low death-rate, had an area of three times that of Sunderland, where the population to the acre was three times that of even Newcastle. A requisition has been presented to the Mayor to call a public meeting to discuss and consider the whole matter. I believe that the Act of Parliament as to insanitary dwellings, especially as to the east end of Sunderland, will have to be put into force very freely before there is any permanent improvement in the health of the borough. At the same time the Council (as was pointed out at the discussion) would have to make it their duty, when they pulled down property, to provide proper dwellings in its place for the working classes.

*The Sedgefield Asylum.*

The Visiting Committee of the Durham County Asylum have reported that it is quite inadequate to the present requirements of the county, and will continue so until the Sunderland patients are removed. In the asylum on Oct. 13th there were 1265 patients, and eighty-six were boarded out in other asylums.

*Fatal Result following Football Accident at Gateshead.*

An inquest has been held at the Town Hall, Gateshead, on the body of a young man who, it was alleged, died of injuries received in playing football (under Rugby rules). It was shown that the game was played on Sept. 19th, and the deceased was accidentally kicked in the face and eye. The wound was transverse about an inch and a half; it soon healed, and he was supposed to be quite well. He went to the seaside, and returned on Oct. 13th with symptoms of facial paralysis. Tetanus supervened, and death occurred on the 26th. The jury returned a verdict of "Accidental death from injuries received in a friendly football match."

Newcastle-on-Tyne, Nov. 11th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*Edinburgh Medico-Chirurgical Society.*

THE first meeting of this Society for the winter was held on Wednesday of last week. Professor Simpson, the retiring President, delivered his valedictory address, in which he dwelt in detail upon the work brought before the Society during the two years he had occupied the presidential chair, and on the great variety of topics discussed. He made special reference to three great meetings, at one of which had been discussed the education of school children, and at which he compared what he had seen at some of the schools in America with the methods in this country. He lauded the place given to physical training and recreation when properly and regularly applied as it was in some of the American schools. The other great meetings had been devoted to Dr. Philips' paper on his observations on Koch's Treatment of Tuberculosis, and to Dr. Russell's paper on an Organism in Cancer. He was awarded a vote of thanks for his address and for his conduct in the chair. The remainder of the meeting was devoted to business, of which there were several important items. The following office-bearers were elected:—Mr. Joseph Bell, President; Drs. Brackenridge, P. H. Maclaren, and Claud Muirhead, Vice-Presidents; Drs. David Menzies, J. H. Balfour, H. McKenzie Johnstone, R. H. Blaikie, J. Batty Tuke, and Semple, Mr. George A. Berry, and Professor Simpson, Councillors; Dr. Francis Troup, Treasurer; Dr. W. Craig, Editor of Transactions; and Mr. F. M. Caird and Dr. W. Russell, Secretaries.

*Appointments at the Royal Infirmary, Edinburgh.*

The managers of the Royal Infirmary, at their meeting on Monday, elected Dr. William Russell and Dr. Murdoch Brown assistant physicians to the institution. Dr. Russell, who is the senior pathologist to the infirmary, is to continue to hold that office also until the end of the session.

*The New Lord Provost of Edinburgh.*

The new Lord Provost of Edinburgh is Dr. J. A. Russell, or, as he is better known, Bailie Russell. He is a Master of Arts and a Bachelor of Medicine of Edinburgh University, and a Fellow of the Royal College of Physicians of Edinburgh. In his earlier professional years he was a demonstrator of anatomy in the University, but he soon devoted himself to civic affairs, and has been for some years a bailie. In that capacity he has been chairman of the Public Health Committee of the Town Council. He is also inspector of anatomy for Scotland. He is the first medical Lord Provost the city has had—medical men, as a rule, not seeking civic honours and labours in Edinburgh.

*The Aberdeen Medical School Extension.*

The Marquis of Huntly presided at a meeting of the Aberdeen University Court held on the 6th inst. A joint Committee of the Court and the Senatus reported that they approved generally of the amended plans for the extension of Marischal College. His lordship pointed out that the new proposals for the enlargement were practically the same as those suggested by the Court some time ago; the only difference was an alteration of the site on which to rebuild the Greyfriars Church. On moving that the report of the committee be received, an amendment was adopted that the consideration of the matter be deferred to a special meeting of the Court to be held on the 20th inst., and it was further decided that the Court should meet in committee on the 16th inst. to consider the plans of the extension scheme.

Nov. 10th.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*Direct Representative for Ireland on the General Medical Council.*

DR. KIDD, whose tenure of office will shortly expire, has issued a circular to the electors asking for re-election. He states that he has taken an active part in promoting important reforms in preliminary and professional education that have recently been recommended by the Council, and which will come into operation on the 1st of January next, and he desires to assist in carrying out and perfecting these reforms. Dr. Kidd regards the supervision of education and examinations as the most important of the functions of the Medical Council, and is of opinion that the age at which registrable qualifications can be obtained should be raised. As regards increasing the number of direct representatives, he believes the time has not yet arrived for doing so, as before their number can be increased a plan should be arranged for reducing the number of other representatives, otherwise each member added would increase the general expenditure by at least £100 a year; and at present the Council is already unwieldy from its size. Dr. Kidd believes that to establish a single portal for the three kingdoms, or one portal for each division of the kingdom, would lower the standard of education and check all progress, and give instead a uniform mediocrity. Lastly, he is opposed to all the measures that have been proposed for the registration of midwives, believing that efficient education is what is required, and not registration. Dr. Kidd has been a very efficient representative, and there is not the slightest doubt that he will be re-elected for a further term of five years.

*House of Industry Hospitals.*

The annual dinner of the medical staff and friends took place on Saturday evening in the Shelbourne Hotel, presided over by Dr. Kidd. The toast of "Success and Prosperity to the House of Industry Hospitals" was proposed by Dr. E. H. Bennett, Professor of Surgery in the University of Dublin, and a former student of the Richmond Hospital.

*Death under Chloroform.*

Mr. Kenny, M.P., Coroner for Dublin, held an inquest last week at the Lock Hospital on the body of a girl aged twenty-one, who died during the administration of chloroform. The anæsthetic was given by the house surgeon, who stated at the inquest that the quantity of chloroform administered did not exceed a teaspoonful, and that death resulted within five minutes. A verdict of death from syncope was returned.

*Health of Dublin during 1890.*

The births registered in the Dublin Registration District during last year numbered 9629, or 27 per 1000, the average rate for the previous ten years being 29. The deaths numbered 9454, but omitting 276 deaths of persons admitted into public institutions from places outside the Dublin area the rate was 25·5, being 2·1 below the average rate for the previous ten years. Deaths from zymotic diseases numbered 1019, or 418 below the average yearly number in the past decade. The deaths in the city proper were 7112, as against 7036 in 1889, and from zymotic diseases 745 as against 869 in 1889. Measles caused 67 deaths, against 109 in 1889; only 6 deaths occurred from scarlatina, and not a single death from small-pox. In former years typhus fever prevailed extensively in almost every district in the city, but latterly it has become one of the least fatal of zymotic diseases. Last year it caused 17 deaths, being two above the number recorded in 1889. Whooping-cough was very fatal, causing 148 deaths, as against 102; and diarrhœa and dysentery 148 deaths, as against 257. Typhoid fever showed a decline—viz., 123 against 170. The deaths from phthisis and other diseases of the respiratory organs were very heavy. In England the recorded death-rates are corrected by factors founded on the distribution of age and sex in the different registration districts, and with this correction Dublin is shown to be more favourably circumstanced than any great English town, except Manchester and Oldham.

*Death of Dr. Thomas Evelyn Little.*

This gentleman died rather suddenly early this morning. Yesterday, when proceeding to lecture on anatomy in the School of Physic, Trinity College, he was attacked with illness and removed to his residence, where he succumbed after a few hours' illness. Deceased was an ex-medical scholar, a graduate in medicine of the University of Dublin, university anatomist, and surgeon to Sir P. Dun's Hospital. He was appointed university anatomist in 1873.

*The Opening of the Winter Medical Session at Belfast.*

The medical session of 1891-92 began on Tuesday, Nov. 3rd. At the Royal Hospital, the introductory address was delivered by Dr. Ross, senior physician, who, after welcoming the students, gave them some admirable advice as to the best methods to be followed in acquiring a sound practical knowledge of their profession. Classes began at the College on the same day, and it would appear that the number of students is larger than usual.

*The Ulster Medical Society.*

The opening meeting of the session was held in the museum on Nov. 4th, when there was a very large attendance of members and senior students. Dr. Henry O'Neill, the new president, delivered his inaugural address, in which he reviewed the most recent advances of surgery, dwelling specially on the relationship of bacteriology to surgery, the antiseptic treatment of wounds, and cranial, spinal, and abdominal surgery. The address, which throughout was very practical, was specially interesting from the fact that Dr. O'Neill was able to relate a series of successful cases from his own practice, which illustrated the latest advances in surgical work. On the motion of Dr. Harkin, J.P., seconded by Professor Sinclair, a very hearty vote of thanks was passed to Dr. O'Neill for his admirable address. The annual dinner is to be held on Nov. 26th.

*Reappearance of Influenza.*

During the past ten days this disease has broken out again in different parts of Belfast, but for the present the type of the disease is not of a severe nature.

*Belfast Medical Students' Association.*

The inaugural meeting of this Society was held in the surgery class-room of Queen's College on Nov. 9th. From the report submitted I gather that the Society is prospering, and is succeeding in its objects, which are to promote the interests of the students attending the Belfast Medical School. For the ensuing year the following officers were elected: Patron—Rev. President Hamilton, D.D., LL.D. President—Dr. Mitchell. Vice-Presidents—Dr. M'Quitty, Dr. M'Kisack, Dr. John Campbell, Dr. H. O'Neill, Dr. Morrow. Hon. Treasurer—Mr. A. Jameson, M.A. Hon. Secretary—Mr. A. Fulton, B.A.

Nov. 10th, 1891.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*Medical Education at the Paris Faculty and Foreign Students.*

A LETTER from a graduate of Aberdeen asking for information concerning the conditions of graduation at the Paris Faculty of Medicine having been referred to me, I shall devote my letter to the elucidation of that subject. Having myself gone through the complete course of study and passed all the examinations required for the degree of M.D. Paris, I can speak *en connaissance de cause*. But as the last few years have witnessed the development of a movement tending to render the acquirement of the degree a matter of greater difficulty to the foreign practitioner (a new Medical Bill is at the present moment under consideration by a committee of the Senate), I deemed it incumbent on me to seek an interview with Professor Brouardel, Dean of the Faculty, in order to bring my information up to date. That interview was this morning readily granted, and I was received with that urbanity which has contributed in no small measure to the great popularity of the learned professor, both here in his native land and in England. From his remarks it was apparent that M. Brouardel is personally actuated by the most cordial feelings towards the foreign element in the University. But, as the dean very aptly observed, public opinion amongst the rank and file of the profession in France must be taken into account, since the privileged admission of the foreigner to graduation means the settling of that foreigner, not in a country district, where doctors are sadly wanted, but at some fashionable health resort, where the liberal

fees that might otherwise find their way into the Frenchman's pocket are gleaned by his foreign rival. Let it not be forgotten that the French aspirant to the Doctorate, even though he be provided with a foreign medical degree, is compelled to pass, in the course of the minimum curriculum of four years, five examinations, and write a thesis. Before taking the first of his sixteen *inscriptions*, one being taken every three months during the four years' course, he must furnish proof of his having acquired the degrees of Bachelier-ès-Lettres and Bachelier-ès-Sciences Restreint of the University of France. The five examinations above mentioned are as follows:—

*First Examination*.—Chemistry, Physics, Natural History (Botany and Zoology)

*Second Examination*.—Part I.: Dissection, Anatomy, Histology. Part II.: Physiology.

*Third Examination*.—Part I.: Operative Surgery on the dead body, Surgery, Midwifery. Part II.: Medicine, General Pathology.

*Fourth Examination*.—Therapeutics, Materia Medica, Pharmacology, Legal Medicine, Hygiene.

*Fifth Examination*.—Part I.: Clinical Surgery and Midwifery. Part II.: Clinical Medicine and Practical Pathology.

The thesis may be written on any subject, subject to the approval of the professor chosen as the *Président de Thèse*.

All the theoretical examinations are oral, except that portion of the fourth relating to legal medicine, in which a report, in due legal form, of a given hypothetical case is required. The fees payable for the whole curriculum, including the diploma, is 1530 francs—i.e., a little over £60. The concessions made to foreign doctors are actually as follows: On presentation of an application to the Minister of Public Instruction, accompanied by a translation into French of certificates (a duly legalised translation of his certificate of birth is also necessary) and diplomas possessed by him, he may be allowed to enter his name as a student at the Faculty, and will be excused the preliminary examinations (Baccalauréat-ès-Lettres and ès-Sciences Restreint). He will also be generally excused the first examination, and if he be an author of acknowledged standing, his trials may only commence with the third examination. But any further concessions as regards examinations must not be hoped for. Another valuable indulgence extended to foreign doctors is the permission to "take" all their sixteen inscriptions at once, thus enabling them to prepare for their examinations as rapidly as they choose. In case of failure at an examination, foreign candidates are allowed, as a rule, to re-present themselves after the lapse of one month, instead of having to wait three months, according to the rule. As mentioned above, the whole cost of his education up to the taking of the degree is 1530 francs. This includes dissection (parts are not charged for here), practical anatomy, obstetrical operations on the mannikin, use of microscope, and hospital practice. No Paris hospital is autonomous, each one (excepting the Clinique Baudelocque, reserved for *sages femmes*) being open to any student of the Faculty. A competitive examination held each year confers on the successful candidate the privileges of an *externe*, whose duties are to take observations, dress wounds, serve in the out-patient rooms, perform necropsies, assist at operations, &c. About 300 are appointed annually for three years. The *internes* are chosen from amongst the *externes* by a competitive process, which is very difficult. About fifty are appointed annually, their term of office being four years. Their duties correspond to those of the house surgeons, house physicians, and resident accoucheurs of our own hospitals. Most of them are lodged in the hospital. During their term of office they, like the more humble *externe*, wander from surgical to medical, eye, obstetrical, &c., wards, and they enjoy grand opportunities for the acquirement of sound practical knowledge. The patients are visited always in the morning at 8.30 or 9 o'clock, and clinical lectures are very frequently delivered. We may look forward to a considerable extension and improvement of the clinical teaching in Paris in the near future, it being recognised that practical instruction in the wards is at present inadequate to the wants of the bulk of the students, who are not, and never aspire to be, *internes*. Great strides have been made in medical education of late years at this Faculty. A magnificent *Ecole Pratique* has been constructed, and in its dissecting rooms and laboratories the student will find all his requirements in that direction fulfilled. The student of neurology can attend the popular lectures given by Professor Charcot on Tuesdays at the Salpêtrière. On Fridays the professor examines cases in the presence of his pupils. Those interested in syphilography and skin diseases can hardly do better than frequent the wards of St. Louis, where they will receive instruction from such authorities as Fournier, Besnier, Quinquand, not to mention Péan on surgery. This Faculty has always been renowned for its obstetricians, and the student will find at the admirably organised *clinique d'accouchements* ample opportunities for perfecting himself in this art. Other well-conducted *services d'accouchements* are found at the Charité (M. Budin), St. Louis, &c. Bacteriologists can in five or six weeks receive at the hands of M. Roux sufficient instruction in the technique of bacteriology to enable them to pursue independent researches. The lessons are given at the Institut Pasteur to students (a fee is charged), arranged in series.

The above *aperçu* of the advantages offered by this great Faculty is necessarily an incomplete one. For further information I can do no better than refer the reader to the excellent "Guide Médical de Paris," published by the *Semaine Médicale* (18, Rue de l'Abbé de l'Épée). Its cost is trifling and the information thoroughly reliable.

My communication would be still more incomplete were I to omit all mention of the admirable demonstrations given on Wednesdays by Professor Brouardel at the Morgue. He conducts necropsies before his class, and discusses the cause of death and the medico-legal aspects of the cases. Such an opportunity as this will be appreciated by no one more than the English practitioner, whose training in this branch of medical education is sadly deficient.

Paris, Nov. 11th.

## BERLIN.

(FROM OUR OWN CORRESPONDENT.)

### *Professor Billroth on the New Rifle.*

IN a recent lecture Professor Billroth spoke on the effect of the new rifle in war, and declared that the ambulance department in Austria would be absolutely inadequate to deal with the vast number of the wounded.

### *Influenza in St. Petersburg.*

Influenza is assuming more and more the character of an epidemic in St. Petersburg. According to the statistics drawn up by the municipal authorities, the number of cases in August was 23, in September 190, and in the first half of October, which month, according to the Russian calendar, is not yet ended, 213. As yet only three deaths are reported. It will be remembered that the influenza epidemic of 1889 came to Germany from Russia.

### *Professor Ehrlich on Abrin.*

In founding Koch's Institute for Infectious Diseases, Dr. von Gossler, then Prussian Minister of Ecclesiastical, Educational, and Medical Affairs, stipulated that all the investigations made there should be published. The first publication saw the light a week or two ago in the *Deutsche Medicinische Wochenschrift*, and its author is Professor Ehrlich, who has long been one of Koch's fellow-labourers. It treats of abrin, a poisonous albuminous body, against the noxious effect of which animals can be rendered immune by strong dilutions of it.

### *The Purification of Water by Electricity.*

Webster's method of purifying waste water has been tested by Dr. Fermi in the Hygienic Institute in Munich, and he has communicated the result in the last volume of the *Archiv für Hygiene*. The electrified waste water, he says, purifies itself in about fifteen minutes. The dissolved organic substances are reduced by about one-half, and the suspended substances are either precipitated to the bottom by the ferric hydrate formed on the surface of the iron electrodes, or gather on the surface of the water. The smell of the water is perceptibly improved. The oxygen generated by the electrolytic decomposition of the water and the chlorine set free by the decomposition of the chlorides gather on the positive electrode, the ammonia developed by the separating of nitrogenous substances on the negative one. The method has two considerable advantages. The first is that very little iron is precipitated, and its removal is therefore not so difficult as in the case of water purified by chemical methods. The second is that the dissolved organic substances, which

are not precipitated by any of the chemical methods hitherto applied, are at least partially got rid of by the electric current. The stronger the current, the larger the surface of the electrodes, and the longer the electrisation lasts, the quicker and completer is the purification. The organic substances contained in a litre of water can be reduced by two-thirds in one hour by an electric current of 0·5 to 1·0 ampère with flat iron electrodes 80 cubic centimetres in size and 5 centimetres apart. The number of germs is thus diminished fifty or a hundredfold. The purifying effect of such a current, however, is less reliable than that of the addition of 1 per cent. of lime, which completely frees the water of germs, and keeps it free, whereas in the electrified water the germs multiply again fivefold in forty-eight hours. Weaker currents, even when applied for a longer time, give no better results. In contrast to most of the known chemical methods, some oxidisable organic substances are reduced in quantity by the electric current. Electricity seems not to realise the ideal of the purification of water, but it is certain to compete formidably with the chemical methods, and the method will probably be greatly improved.

*The Number of Medical Students in Germany.*

The number of students who matriculated in the twenty universities of Germany and the Academy of Münster last term was 28,515, of whom the largest contingent—namely, 3916—were students of medicine.

*Professor Erwin von Esmarch.*

Dr. Erwin von Esmarch has been appointed to succeed Professor Carl Fraenkel, who has accepted a call to Marburg, in the Chair of Hygiene. He is a son of the famous surgeon, Professor von Esmarch of Kiel, and is one of the most diligent and distinguished of Robert Koch's pupils and fellow-labourers. He has been for some time past curator of the Hygienic Museum here, and acted as interim head of the Hygienic Institute after Koch's retirement last autumn. He was Koch's assistant for several years. He established himself last year as private lecturer on hygiene in the medical faculty here. Several new ideas in bacteriology and disinfection are the fruits of his labours. He and Professor Carl Fraenkel are the editors of the *Hygienic Review* (*Hygienische Rundschau*).

Berlin, Nov. 10th.

## ROYAL COLLEGE OF SURGEONS.

AT an ordinary meeting of the Council of the above College held on the 12th inst., the minutes of the quarterly Council of the 15th ult. were read and confirmed.

In accordance with a recommendation of the Museums Committee a grant was made to Dr. Hunter in aid of the expenses for apparatus &c. incurred in connexion with his recent visit to Berlin for the study of tuberculosis.

A report from the Laboratories Committee, dated the 16th of October, was read, approved, and adopted. The report contained the following resolutions:—That a series of lectures be given in the theatre for the purpose of enabling some of those who have been pursuing their investigations in the Laboratories to publish the results of their work, and that a short series of lectures be given during the month of December, the particulars of which will be made known in due course. That the publication of several papers by workers in the laboratories in various scientific journals be sanctioned. That Mr. Bowlby be re-elected a member of the Committee.

The following recommendation, contained in a report of the Committee of Management, was read and adopted:—"Every candidate shall have produced evidence that during a period of six months after obtaining a registrable qualification he either has practically studied the duties of out-door sanitary work under the medical officer of health of a county or large urban district, or else has himself held appointment as medical officer of health under conditions not requiring the possession of a special sanitary diploma."

The Secretary of the College was instructed to forward replies to the proposer and seconder of each of the four resolutions which were brought forward at the meeting of Fellows and Members on the 5th inst., as follows:—

To the first resolution, moved by Mr. Joseph Smith: "The Council regret that they cannot accede to the request contained in the resolution which was carried at the meeting of the Fellows and Members on the 5th inst."

To the second resolution, moved by Mr. Bruce Clarke: "That the resolution has been laid before the Council."

To the third, proposed by Mr. Nelson Hardy: "The Council see no advantage in holding a further meeting of Fellows and Members, and that a report will be found of the meeting of Fellows and Members of the 11th of May, 1891, at p. 312 of the College Calendar, in the Secretary's report."

To the fourth, moved by Mr. Edridge Green: "That it is laid before the Council to be considered at a future meeting."

# Medical News.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS IN IRELAND: CONJOINT SCHEME.—The following candidates having passed the Final Examination are entitled to receive diplomas in Medicine, Surgery, and Midwifery:—

A. J. Arthur, H. K. Bentley, J. G. Boon, J. P. Calman, R. P. Connell, V. B. Cooke, J. J. Cullen, Michael G. Dobbyn, J. H. Farmer, W. J. Greer, W. Hall, H. P. Jones, G. Q. Lennane, T. R. Macnamara, W. M. Meeke, C. A. Malony, R. R. Madden, T. K. Mulcahy, T. F. McDonnell, J. O'Donoghue, R. J. Perkins, J. S. Proctor, G. Q. Richardson, R. Roe, W. Russell, F. P. Smith, and G. O'K. Wilson.

*Passed in Medicine.*—W. J. Corbett, M. Ferguson, H. B. Hayes, L. A. Jameson, J. M. Mangan, G. H. Russell, and T. P. Sexton.

*Passed in Surgery.*—E. H. Beaman, M. Ferguson, E. Frazer, R. B. Hunt, J. M. Mangan, and R. Moynghan.

*Passed in Midwifery.*—E. H. Beaman, W. J. Corbett, W. C. Hamilton, H. B. Hayes, E. Lynch, R. Moynahan, T. P. Sexton, G. T. Whyte, and E. D. Williams.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—DIPLOMA IN SURGERY.—The following registered Physicians, having passed the necessary examinations, have been granted the diploma in Surgery of the Colleges:—

Dr. F. P. R. James (Leeds), Dr. A. McFarland (Dublin), and Dr. N. A. A. Trenow (Hythe).

FEVER IN THE SOUTH-EAST OF LONDON.—At the meeting of the London County Council on Tuesday it was resolved—"That it be an instruction to the Sanitary and Special Purposes Committee to arrange for an immediate investigation into the source of contagion of the serious outbreak of typhoid fever in the south-east of London."

M. PASTEUR has succeeded in obtaining an annual subsidy from the Government to enable poor persons living at a distance from his institute to reach it in the event of their needing his treatment. Of course the funds allowed by the Minister of the Interior will only be used for French people.

A NEW HOSPITAL CONVALESCENT HOME is in course of erection at Parkwood, Kent, about a mile from Swanley Junction Station on the L. C. and D Railway. The cost of building is estimated at about £40,000, and it will accommodate 120 convalescent patients, together with the medical men and the general staff. The inmates will be admitted from some of the London hospitals.

FOOTBALL CASUALTIES.—During a football match at Aldershot, last week, between the Royal Leinster Regiment and the Royal Engineers, a corporal of the latter corps received a severe compound fracture of his right leg.—On Saturday, a youth, eighteen years of age, whilst playing football with Brown's Cleveland Rovers against the West Hartlepool Ramblers, at Middlesbrough, had his leg broken.—In a Rugby football match at Dover, on Saturday, a corporal in the Border Regiment sustained a fractured ankle.—On the 7th inst. a man, a forward in the Farsley football team, whilst playing at Farsley against the Bramley A team, had his collar-bone dislocated.

THE HOME OF REST FOR TRAINED NURSES.—For the benefit of over-taxed nurses a home of rest has been founded, and was on May 4th, 1891, opened by H.R.H. the Princess Christian. The home is situated in Sussex-square, Brighton. It is large enough to accommodate sixteen nurses, and will require £300 a year, beyond the payment of the nurses, to defray all the expenses connected with it. The home is now completely furnished, and has constantly been filled since August. Similar institutions are much needed in other parts of the kingdom, but the committee cannot undertake any fresh obligations until a sufficient endowment fund has been accumulated to make the home at Brighton financially secure.

HYDROPHOBIA.—Accounts of cases of hydrophobia have been numerous within the last few days. At Waltham Abbey, at Cookstown, and at Kilkenny persons have succumbed to the terrible disease.

ROYAL INSTITUTION—The Christmas Lectures to Juveniles will this year be on "Life in Motion, or the Animal Machine experimentally illustrated," and will be delivered by Dr. John G. McKendrick, F.R.S., the Professor of Physiologyin the University of Glasgow.

AN ASYLUM FOR WEST SUSSEX. — The Local Government Act Commissioners have decided to provide separate asylum accommodation for pauper lunatics, and that the Councils of East Sussex and Brighton shall compensate West Sussex for the share of the existing asylum accommodation of which it will thus be deprived.

INFECTIOUS DISEASE HOSPITAL AT WIMBLEDON.—At the meeting of the Local Board of Wimbledon on the 4th inst., the committee reported that no further cases of infectious disease could be taken into the hospital, and recommended that increased accommodation be provided. The report was adopted. The expense thus entailed was estimated to amount to £2500.

THE DENTAL HOSPITAL OF LONDON.—The annual dinner of the staff and past and present students will be held on Saturday, Dec. 5th, at the Holborn Restaurant, under the presidency of Mr. David Hepburn. Gentlemen either now or formerly connected with the hospital or medical school, who may, through inadvertence, not have received special notice, and who desire to be present, should communicate with the dean at the Dental Hospital, 40, Leicester-Square.

WOODLANDS CONVALESCENT HOME, RAWDON.—This home has been opened for fourteen years, but it does not appear to have fulfilled the benevolent intentions of its founder. In consequence, it has been decided to transfer the care of the institution to the governors of the Bradford Infirmary, with the view of extending its usefulness and adapting its benefits to the requirements of those for whom it was erected. The transfer thus resolved upon will take place at the close of the present year.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The next quarterly meeting of the Medico-Psychological Association will be held at the house of Dr. B. W. Richardson, F.R.S., 25, Manchester Square, London, on Thursday, Nov. 19th, at 4 P.M. Council meeting at 3 P.M. Dr. Richardson will lecture on "The Cerebro-spinal Axis as a Water Power: a new theory, bearing on some forms of Mental Disease." If there be time Dr. Ewart will read a paper on "Epileptic Colonies."

DONCASTER INFIRMARY AND DISPENSARY.—The report for the past year of this institution was read by the honorary secretary at the annual meeting held last week. It appeared that the subscriptions by removals, deaths, and other causes showed a small deficiency, and the Infirmary Saturday collections were less than the previous year. The report and balance-sheet were passed. After the usual vote of thanks to the honorary medical staff and others the chairman urged the necessity of efforts being made to obtain an increase to the income.

PROPOSED HOSPITAL AT STRATHPEFFER.—At a public meeting held on the 15th ult., a letter was read from the Cromartie Estate Office promising a site for the proposed building at a nominal rent. A resolution was carried to erect the hospital, and a committee appointed to promote the object in view. The old hospital at Strathpeffer has been long since taken down, and many of the residents have conceived the idea of erecting in its stead a mineral water hospital at the Spa, where poor visitors might obtain suitable accommodation and treatment.

RECOGNITION OF MEDICAL SERVICES.—On Nov. 6th the Mayor of Southampton made several presentations received from the German Emperor in acknowledgment of services rendered to the crew of the *Humboldt* by officers of the *Don* in March last. Amongst the presentations was that of a gold watch, having the Emperor's portrait and autograph engraved upon it, to Mr. V. F. Lennane, L.R.C.P., L.R.C.S. Ed., the surgeon of the latter vessel, who assiduously attended the survivors taken from the *Humboldt* on board the *Don*.

MEDICAL MAGISTRATE.—The name of Philip C. Shepheard, M.R.C.S., L.S.A., of Aylsham, Norfolk, has been inscribed in the Commission of the Peace for Norfolk.

GIFT TO KILMARNOCK INFIRMARY. — It was announced at a special meeting of the subscribers held last week that two ladies would give £1000 each for the endowment of two cots in the infirmary.

ABERDEEN UNIVERSITY CLUB, LONDON. — The next half-yearly dinner of this Club will take place at the Holborn Restaurant on Wednesday, Nov. 18th, at 7.30 P.M., Sir Thomas Sutherland, K.C.M.G., M.P. in the chair.

THE Westminster Hospital Students' Dinner took place on Saturday night at the "Criterion," Piccadilly. It was a great success. Dr. C. E. A. McLeod occupied the chair, and Mr. Nitch-Smith fulfilled the duties of secretary. The usual toasts, songs, &c., were got through, and a most pleasant evening was spent.

UNIVERSITY OF CAMBRIDGE.—The Coutts Trotter Studentship, of the annual value of £250, for the promotion of original research in Natural Science, more especially Physiology and Experimental Physics, open to graduates of Trinity College, not being Fellows, who are not of more than seven years' standing from the time of commencing residence, has been awarded to John Walton Capstick, B.A., scholar of the College.

A UNIVERSITY FOR WALES. — An influential meeting was held in Shrewsbury on Wednesday for the purpose of promoting the establishment of a University for Wales. Lord Aberdare, who presided, said they did not wish this great educational movement in Wales to be a political movement, but wished to unite in advancing the scholastic interests of that country. He proposed that the University of Wales should be a teaching university, and that no candidate be admitted to a degree unless he should have pursued such a course of study at one of the colleges of the University as the University governing body prescribed. Principal Reichel seconded the motion. The meeting was not unanimous, many of those present considering that residence at one of the colleges should not be necessary for a degree, but the motion was caried by a large majority.

THE RIVERS AIRE AND CALDER PURIFICATION.—A deputation from the West Riding County Council, headed by the chairman, the Marquis of Ripon, waited upon Mr. Ritchie last week at the offices of the Local Government Board, relative to the steps to be taken for enforcing the provisions of the Rivers Pollution Act with regard to the rivers Aire and Calder. The deputation was essentially representative, and after hearing their views Mr. Ritchie said the Local Government Board would not attempt to exercise its powers to form a joint board by a provisional order, as had been proposed by Leeds and Bradford; but it would, no doubt, be advantageous if equitable arrangements could be made for a joint board for both rivers, and probably communications might be renewed between these two boroughs and the County Council with that object in view, or for a joint board for the river Aire.

## METROPOLITAN ASYLUMS BOARD.

*Return of Patients remaining in the several Fever Hospitals of the Board at Midnight on November 10th, 1891.*

| Hospital. | Beds occupied. | | | | | | Total accommodation. |
|---|---|---|---|---|---|---|---|
| | Scarlet fever. | Diphtheria. | Typhus fever. | Enteric fever. | Other diseases. | Total. | |
| Eastern Hospital .. .. | 202 | 45 | .. | 55 | .. | 302 | 442 |
| North-Western Hospital | 302 | 51 | .. | 19 | 3 | 275 | 411 |
| Western ,, | 113 | 24 | .. | 8 | 4 | 149 | 224 |
| South-Western ,, | 155 | 21 | .. | 58 | 3 | 237 | 340 |
| South-Eastern ,, | 197 | 18 | 4 | 113 | 3 | 335 | 458 |
| Northern ,, | 397 | 26 | .. | 30 | ... | 453 | 480 |
| Totals .. .. .. | 1366 | 185 | 4 | 283 | 13 | 1851 | 2355 |

SMALL-POX.—*Atlas* hospital ship, 1.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ACKLAND, ROBERT CRAIG, L.R.C.P. Lond., M.R.C.S., L.D.S. Eng., has been appointed Assistant Dental Surgeon to St. Bartholomew's Hospital.

BOURNAN, HY. M., M.B., M.R.C.S., L.R.C.P. Lond., has been appointed Junior House Physician to the National Hospital for the Paralysed and Epileptic, Queen-square, Bloomsbury, vice W. P. May, resigned.

BROWNE, ROBERT CUNYNGHAME, M.B., B.S. Durh , has been appointed Senior Assistant House Surgeon to the Huddersfield Infirmary.

CHICKEN, R. C., F.R.C.S. Eng., has been appointed Honorary Surgeon to the General Hospital, Nottingham.

DOVE, EMILE LOUISA, M.B. Lond , has been appointed Resident Medical Officer at the New Hospital for Women, Euston-road.

DUMBLETON, C. EARDLEY, M.A., M.D. Cantab., D.P.H Eng , has been appointed Health Officer to the Municipality of Singapore, Straits Settlements, and Medical Officer to the Municipal Staff.

FORWARD, FRANCIS EDWARD, F.R.C.S., has been appointed Resident Medical Officer to the Holberton Institution, Antigua.

HADLEY, W. J., M.D., M.R.C.P., F.R.C.S., has been appointed an Assistant Physician to the City of London Hospital for Diseases of the Chest, Victoria-park, vice Dr. Lewis Jones, resigned.

HUTCHEON, JOHN WATSON, M.B., C.M., D.P.H., has been appointed Medical Officer to the Aberdeen Dispensary and Lying-in Institution, vice Dr. McKenzie Booth, resigned.

JACOB, E. L., B.A. Lond., M.R.C.S., has been reappointed Medical Officer of Health for the Dorking Sanitary District.

KIDD, ARCHIBALD, M.R.C.S., L.R.C.P., has been appointed House Physician to the Middlesex Hospital.

LITTLE, J. F., M.B. Camb., M.R.C.P. Lond., L.R.C.S., L.R.C.P. Edin., has been appointed a Medical Officer of the Harrow Local Board.

LITTLE, JOHN FLETCHER, M.B. Cantab., M.R.C.P. Lond., has been appointed Medical Officer of Health for Harrow, vice Professor Finlay, resigned; also Physician to the North London Hospital for Consumption.

LUND, H., M.B., B.C. Cantab., F.R.C.S., has been appointed Honorary Surgeon to the Salford Royal Hospital, vice Stocks, resigned.

NOWELL, JACOB ARTHUR, L.R.C.P., L.R.C.S., has been appointed Honorary Medical Officer for Out-patients to the Richmond Hospital, Surrey, vice Dr. Fenn, resigned.

PARK, D. S., L.R.C.P., F.R.C.S. Edin., has been appointed Medical Officer for the Houghton-le-Spring Sanitary District and the Workhouse of the Houghton-le-Spring Union.

RHODES, G. FRANCIS, M.B., C.M. Edin., has been appointed Senior House Surgeon to the Huddersfield Infirmary, vice H. Hirst, resigned.

TAYLOR, S. F., M.B. Lond., L.R.C.P., M.R.C.S., has been reappointed Medical Officer of Health for Cromer.

THOMAS, R. T., M.D. Brux., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Second Sanitary District of the Liskeard Union.

WHITEHEAD, JOHN, M.D. St. And., M.R.C S., has been appointed Consulting Physician to the County Hospital, Ryde, Isle of Wight, vice Sir W. Hoffmeister.

WEAR, ALGERNON EDW. L., M.B., B.S. Durh,, has been appointed Resident Obstetric Officer to the General Infirmary at Leeds, vice W. A. Stott, resigned.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement.*

BISHOP'S STORTORD UNION.—Medical Officer and Public Vaccinator for the Sawbridgeworth District. Salary offered is £60 per annum, and other fees. (Apply to the Clerk to the Guardians, Bishop's Stortford.)

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Board and residence and allowance for washing provided. (Apply to the Secretary, 24, Finsbury-circus, E.C.)

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Pathologist. Salary 100 guineas per annum. (Apply to the Secretary, 24, Finsbury-circus, E.C.)

CLAYTON HOSPITAL AND WAKEFIELD GENERAL DISPENSARY.—Junior House Surgeon. Honorarium £25 per annum, with board, lodging, and washing.

CHESTER GENERAL INFIRMARY.—Visiting Surgeon for two years. Salary to commence at £80 per annum, with residence and maintenance in the house.

DARLINGTON HOSPITAL AND DISPENSARY.—House Surgeon. Salary £100 per annum, with board and lodging.

DUDLEY DISPENSARY.—Resident Medical Officer. Salary £130, with increase at end of twelve months if services satisfactory. Good house (furnished, except beds and bed and house linen), coals, gas, and water provided, and rates and taxes paid.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Dental Surgeon.

HOSPITAL FOR WOMEN (THE LONDON SCHOOL OF GYNÆCOLOGY), Soho-square, W.—Clinical Assistants.

LONDON HOSPITAL, Whitechapel-road, E.—Medical Registrarship. Salary at the rate of £100 per annum.

METROPOLITAN ASYLUMS BOARD.—Medical Superintendent for the Eastern Fever Hospital, Homerton, N.E. Salary £500 per annum, with unfurnished residence, coals, gas and washing. (Apply at the chief offices of the Board, Norfolk House, Norfolk-street, W.C.)

NOTTINGHAM GENERAL HOSPITAL.—Resident Surgical Assistant for six months. No salary. Board, lodging, and washing in the hospital provided.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, N.E.—Junior House Surgeon for three months. Salary at the rate of £60 per annum. (Apply to the Secretary, City Offices, 27, Clement's-lane, E.C.)

NORTH DEVON INFIRMARY, Barnstaple.—House Surgeon.

NORTHERN INFIRMARY, Inverness.—House Surgeon and Apothecary. Salary £100 per annum, with board &c.

OWENS COLLEGE, Manchester.—Professorship of Pathology. Stipend £350 per annum, with one-third of the fees paid by students attending the classes of the department.

PARISH OF ST. MARYLEBONE.—Infirmary Assistant Medical Officer at the Infirmary, Rachham-street, Ladbroke-grove-road, Notting-hill. Salary £130 per annum, with furnished apartments, rations, and washing. (Apply to the Clerk to the Guardians, Marylebone-road, W.)

POOLE FRIENDLY SOCIETIES' MEDICAL ASSOCIATION.—Junior Medical Officer. Salary £120 per annum (out-). (Apply to the Secretary, Market-street, Poole.)

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—Assistant Physician.

ROYAL INFIRMARY, BRISTOL.—Honorary Obstetric Physician.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—House Physician for six months. Salary at the rate of £40 per annum, with board and lodging.

ST. HELEN'S FRIENDLY SOCIETIES' MEDICAL AID ASSOCIATION.—Senior Medical Officer. Salary to commence at £160 per annum, with residence free; also additional fees for midwifery of 10s. 6d. in each case. Conveyance provided. (Apply to Mr. T. Crooks, Cowley Hill, St. Helen's, Lancashire.)

TAUNTON AND SOMERSET HOSPITAL.—Assistant House Surgeon for six months. He will be required to pay £15 for his board and lodging during that period.

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE, Newcastle-upon-Tyne.—Qualified Instructor in Bacteriology and Comparative Pathology in a Laboratory of Hygiene.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician for six months. Board and lodging provided.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Surgeon for six months. Board and lodging provided.

WELLINGBOROUGH MEDICAL INSTITUTE.—Dispenser. Salary £1 a week. (Apply to the Secretary, Jackson's-lane, Wellingborough.)

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon. Board and lodging free. Honorarium 50 guineas per annum.

# Births, Marriages, and Deaths.

## BIRTHS.

FIELD.—On Nov. 9th, at High-street, Clapham, S.W., the wife of Oliver Field, M.D., of a son.

KINNEIR.—On Nov. 5th, at Gordon House, Horsham, the wife of F. W. E. Kinneir, Surgeon, of a son.

MANTLE.—On Oct. 31st, at Park-road, Halifax, the wife of Alfred Mantle, M.D., of a son.

MANTON.—On Nov. 8th, at Shrewsbury House, Norfolk-road, Sheffield, the wife of Councillor Manton, M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.

PRICE.—On Nov. 7th, the wife of J. A. P. Price, M.D., Castle-street, Reading, of a daughter.

STOWERS.—On Nov 7th, at Finsbury-square, the wife of James Herbert Stowers, M.D., of a son.

WALKER.—On Nov. 4th, at Wimborne, the wife of Robert Walker, M.D , of Budleigh Salterton, of a son.

## MARRIAGES.

ALEXANDER—STOCK.—At St. Saviour's, Redland, William John Alexander, M.R.C.S., eldest son of William Adye, M.D., of Bradford-on-Avon, Wilts, to Harriette Emily, only daughter of the late William Spry Stock, of Cotham, Bristol.

STURGES—BRETHERTON.—On Nov. 7th, at St. Paul's, Beckenham, Frank Sturges, L.R.C.P., &c., of Mirzapore, Beckenham, to Mary Angela (May) Bretherton, of The Elms, Westgate,road.

## DEATHS.

BOWER.—On Nov. 3rd, at his residence, Perth, John Bower, M.D., L.R.C.S. Edin. (retired), Fleet Surgeon R.N.

DIGAU.—At Coventry-road, Ilford, Matthew Digau, late R.N., L.R.C.S.I., of pneumonia, aged 33 years.

LOCH.—On Nov. 4th, at his residence, West-ascent, St. Leonards-on-Sea, William James Loch, Surgeon (retired) Bengal Army, in his 80th year.

JONES.—On Nov. 7th, at Ventnor, Thomas Wharton Jones, F.R.S., F.R.C.S.

SLANDEN.—On Nov. 8th, at Sutton-in-Ashfield, Peter Slanden, M.B., C.M. Edin., aged 36 years. No cards.

*N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.*

# Medical Diary for the ensuing Week.

### Monday, November 16.

ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1.30 P.M., and on Tuesday, Wednesday, Friday, and Saturday at the same hour.
ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations daily at 10 A.M.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1.30 P.M., and each day at the same hour.
CHELSEA HOSPITAL FOR WOMEN.—Operations, 2.30 P.M.; Thursday, 2.30.
HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M., and on Thursday at the same hour.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and each day in the week at the same hour.
UNIVERSITY COLLEGE HOSPITAL.—Ear and Throat Department, 9 A.M.; Thursday, 9 A.M.
LONDON POST-GRADUATE COURSE.—Hospital for Sick Children, Great Ormond-st.: 4 P.M., Dr. Sturges: Physical Signs, Thoracic and Abdominal.—Royal London Opnthalmic Hospital, Moorfields: 1 P.M., Mr. W. Lang: Corneal Affections.—Great Northern Central Hospital: 8 P.M., Dr. Galloway: Nervous System.
MEDICAL SOCIETY OF LONDON.—8.30 P.M. Mr. Lockwood and Dr. Galloway: Two cases of Perforating Ulcer of the Duodenum in which Laparotomy was performed.—Mr. Richard Davy: Amputation at the Hip-joint, with record of ten cases.

### Tuesday, November 17.

KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.; Fridays and Saturdays at the same hour.
GUY'S HOSPITAL.—Operations, 1.30 P.M., and on Friday at same hour Ophthalmic Operations on Monday at 1.30 and Thursday at 2 P.M.
ST. THOMAS'S HOSPITAL.—Ophthalmic operations, 4 P.M.; Friday, 2 P.M.
ST. MARK'S HOSPITAL.—Operations, 2 P.M.
CANCER HOSPITAL, BROMPTON.—Operations, 2 P.M.; Saturday, 2 P.M.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 2.30 P.M.
ST. MARY'S HOSPITAL.—Operations, 1.30 P.M. Consultations, Monday, 2.30 P.M. Skin Department, Monday and Thursday, 9.30 A.M, Throat Department, Tuesdays and Fridays, 1.30 P.M. Electro-therapeutics, same day, 2 P.M.
LONDON POST-GRADUATE COURSE.—Hospital for Skin Diseases, Blackfriars: 4 P.M. Dr. Payne: Eczema in relation to Internal and General Diseases.—Bethlem Hospital: 2 P.M., Dr. Percy Smith: Puerperal and Lactational Insanity.
PATHOLOGICAL SOCIETY OF LONDON.—Dr. Jas. Adams: Ileo-cæcal Intussusception from Inverted Meckel's Diverticulum.—Mr. J. Bland Sutton: Mandibular Tubercle and Receptacles, with Illustrations on Screen.—Dr. W. B. Hadden: Carcinoma of Œsophagus extending towards the Stomach.—Dr. H. Mackenzie: Intestinal Concretion.—Dr. J. J. Clarke: Lymphadenoma of Spine and Cord.—Mr. W. K. Sibley: Inoculated Tuberculosis in Snakes.—Dr. N. Tirard: Tubercular Growth in Ureter, with Consecutive Changes in Kidney. Card Specimens:—Dr. P. S. Abraham: Feet of supposed Leprous Ducks from South Africa, with Microscopic Sections.—Dr. J. J. Clarke: (1) Charcot's Disease of Hip; (2) Spondilo-listhesis.
ROYAL COLLEGE OF PHYSICIANS (Examination Hall, The Savoy, W.C.)—5 P.M. Dr. Burdon-Sanderson: The Progress of Discovery relating to the Origin and Nature of Infectious Diseases. (Croonian Lecture.)
ROYAL STATISTICAL SOCIETY (Lecture Theatre, Museum of Practical Geology, 28, Jermyn-st., S.W.).—7.45 P.M. Inaugural Address by the President (Dr. F. J. Mouat).
THE SANITARY INSTITUTE (Parkes Museum, Margaret-st., W.).—8 P.M. Prof. A. Wynter Blyth: Diseases of Animals in relation to Meat Supply—Characteristics of Vegetables, Fish, &c., Unfit for Food.

### Wednesday, November 18.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.
MIDDLESEX HOSPITAL.—Operations, 1 P.M. Operations by the Obstetric Physicians on Thursdays at 2 P.M.
CHARING-CROSS HOSPITAL.—Operations, 2 P.M., and on Thursday and Friday at the same hour.
ST. THOMAS'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour.
LONDON HOSPITAL.—Operations, 2 P.M. Thursday & Saturday, same hour.
ST. PETER'S HOSPITAL, COVENT-GARDEN.—Operations, 2 P.M.
SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2.30 P.M.
GREAT NORTHERN CENTRAL HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 1.30 P.M.; Skin Department, 1.45 P.M.; Saturday, 9.15 A.M.
ROYAL FREE HOSPITAL.—Operations, 2 P.M., and on Saturday.
CHILDREN'S HOSPITAL, GREAT ORMOND-STREET.—Operations, 9.30 A.M. Surgical Visits on Wednesday and Saturday at 9.15 A.M.
LONDON POST-GRADUATE COURSE.—Hospital for Consumption, Brompton: 4 P.M., Dr. Percy Kidd: Hæmoptysis.—Royal London Ophthalmic Hospital: 8 P.M., Mr. J. B. Lawford: Toxic Amblyopia.
EPIDEMIOLOGICAL SOCIETY OF LONDON.—8 P.M. Opening Meeting. The President (Dr. Joseph Ewart) will deliver the Inaugural Address.
ROYAL MICROSCOPICAL SOCIETY.—8 P.M. Special Meeting to consider new By-laws. Mr. A. W. Bennett: Fresh-water Algæ of South-west Surrey.

### Thursday, November 19.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. Surgical Consultations, Wednesday, 1.30 P.M. Ophthalmic Operations, Friday, 1.30 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; Ear and Throat Department, 9 A.M.
LONDON POST-GRADUATE COURSE.—Hospital for Sick Children, Great Ormond-st.: 4 P.M., Dr. Sturges: The Associations of Chorea.—National Hospital for the Paralysed and Epileptic: 2 P.M., Mr. Victor Horsley: Surgery of the Nervous System.—London Throat Hospital, Great Portland-st.: 8 P.M., Dr. Woakes: Tinnitus Aurium.
HARVEIAN SOCIETY OF LONDON.—Dr. Goodhart: Common Neurosis.
NEUROLOGICAL SOCIETY OF LONDON (Examination Hall, Victoria Embankment, W.C.).—8.30 P.M. Dr. Dupuy (Paris): The Localisation of the Functions of the Brain.

### Friday, November 20.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.
LONDON POST-GRADUATE COURSE.—Hospital for Consumption, Brompton: 4 P.M., Dr. Percy Kidd: Pleurisy.—Bacteriological Laboratory, King's College: 11 A.M. to 1 P.M., Prof. Crookshank: Leprosy, Glanders, and Swine Fever—Sections of Leprosy.
THE SANITARY INSTITUTE (Parkes Museum, Margaret-st., W.).—8 P.M. Mr. J. F. J. Sykes: Nature of Nuisances, including Nuisances the abatement of which is difficult.

### Saturday, November 21.

MIDDLESEX HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; and Skin Department, 9.15 A.M.
LONDON POST-GRADUATE COURSE.—Bethlem Hospital: 11 A.M., Dr. Percy Smith: Delusional Insanity.

## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, Nov. 12th, 1891.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Dry Bulb. | Wet Bulb. | Solar Radia in Vacuo. | Maximum Temp. Shade. | Min. Temp | Rainfall. | Remarks at 8.30 A.M. |
|---|---|---|---|---|---|---|---|---|---|
| Nov. 6 | 30·50 | N.E. | 44 | 43 | .. | 48 | 41 | ... | Foggy |
| ,, 7 | 30·42 | N.E. | 45 | 43 | 56 | 50 | 43 | ... | Foggy |
| ,, 8 | 30·25 | N.E. | 38 | 37 | .. | 45 | 37 | .. | Overcast |
| ,, 9 | 29·59 | S.W. | 45 | 44 | .. | 49 | 37 | .. | Overcast |
| ,, 10 | 29·62 | S.W. | 41 | 39 | 70 | 53 | 39 | ·31 | Hazy |
| ,, 11 | 28·56 | S.W. | 53 | 52 | 60 | 54 | 40 | ·35 | Raining |
| ,, 12 | 29·32 | S.W. | 44 | 41 | 83 | 52 | 39 | ·39 | Cloudy |

# Notes, Short Comments, & Answers to Correspondents.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.*

*All communications relating to the editorial business of the journal must be addressed "To the Editors."*

*Lectures, original articles, and reports should be written on one side only of the paper.*

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale, and advertising departments of* THE LANCET *to be addressed "To the Publisher."*

*We cannot undertake to return MSS. not used.*

### THE DETERMINATION OF SEX.

WE have received a number of letters dealing with this question in addition to those we have already published. So many subjects of pressing interest are, however, in course of discussion that we cannot, at present at all events, afford more space to the enunciation of views on so recondite, though obviously interesting, a topic as the determination of sex.

*Dr. B. F. P. McDonald.*—It is quite legitimate to indicate in such a way the taking of a partner where it cannot easily be done by personal statement. The essential precautions are that such intimations be sent only to actual patients of the firm, and that they be couched in quiet and professional terms.

*J. R. C.*—THE LANCET, Feb. 25th, 1882. Letters on the same subject will be found in our issues of July 18th and Aug. 8th, 1885.

*M.R.C.S.* had better apply to the Secretary of the British Nurses' Association, 8, Oxford-circus-avenue.

*Mr. Pincus* is referred to a general notice at the head of this column.

### "A QUESTION OF CONTRACT."

*To the Editors of* THE LANCET.

SIRS,—In answer to the letter of "M.R.C.S." on the above subject in your issue of Nov. 7th, I fear he will find it very difficult to obtain a remedy at law against W. Hitherto English judges have looked with considerable suspicion on "covenants not to practise." "M.R.C.S." having bought W.'s practice, the case might be different; but I believe that in the case of assistants the "usual bond"—in other words, a covenant not to practise—does not hold good at law, and is, as a matter of fact, not worth the paper it is written on.

I am, Sirs, yours truly,

Nov. 10th, 1891. L.R.C.P.

### THE BREWERS' EXHIBITION.

*Messrs. Boake & Co.* point out that their Kalium Meta-sulphite, referred to in our article on the Brewers' Exhibition last week, was represented by the formula $K_2SO_3SO_2$, which, though theoretically correct, is not so empirically. The formula $K_2S_2O_5$ conveys a better idea of the nature of the salt. It contains in reality meta-sulphurous acid $H_2S_2O_5$, which in combination is more stable than sulphurous acid, and from which, it is stated, weak acids liberate the whole of the $SO_2$. Hence this interesting substance is probably the most powerful of sulphurous antiseptics.

*Uninsured* will find the information in our present number.

### INTUBATION OF THE ENDOMETRIUM.

*To the Editors of* THE LANCET.

SIRS,—In your number for October 17th there is a valuable paper on Intubation of the Endometrium by Mr. Milton of Cairo, who gives figures of the tubes and forceps used. May I venture to draw attention to a similar form of forceps contrived many years ago by Mr. Sankey of Oxford for the introduction of the outer tube in tracheotomy, which is mentioned by Mr. Pollard in Heath's Dictionary of Practical Surgery, vol. ii., p. 618, and is made by Messrs. Arnold and Son. In use the blades are passed through semilunar openings in the shield of the outer tube (Fuller's), and efficiently compress the valves, rendering the introduction of the tube a very simple matter. Those who have noticed the great force required to compress the tube when the trachea is deeply situated, and the mechanical disadvantage under which the fingers labour in applying this force in the usual way, will appreciate the use of Mr. Sankey's forceps.

I remain, Sirs, yours truly,

J. A. BALL, M.B. Lond.,
Wantage, Nov. 4th, 1891. Consulting Surgeon, Stockport Infirmary.

### APPEAL FOR THE FAMILY OF THE LATE DR. FISHER OF CHELSEA.

THE following subscriptions have been received. Further contributions are urgently needed, and may be sent to Sir J. Lister, Bart., 12, Park-crescent, Portland-place; Mr. Bryant (President, R.C.S.), 65, Grosvenor-street, W.; or Dr. Mapother, 32, Cavendish-square.

| | | | |
|---|---|---|---|
| Mr. W. Morrant Baker .. | £3 2 0 | Dr. Kelly (Taunton) .. | £1 0 0 |
| Mr. Thomas Bryant .. | 3 3 0 | Sir Joseph Lister, Bart. .. | 5 5 0 |
| Dr. J. G. Glover .. | 2 2 0 | Dr. Mapother .. .. | 3 3 0 |
| Dr. Thomas Hawksley .. | 2 2 0 | Sir James Paget, Bart. .. | 2 2 0 |

### "MEAT PASTE."

*To the Editors of* THE LANCET.

SIRS,—In reference to the annotation headed "Meat Paste" in your issue of Sept. 12th, will you allow me to inform your readers that for *many years past* the immense herds of mares, which were such a characteristic feature on estancias in the Argentine, and which were kept up simply for boiling down eventually into tallow, have been replaced by the cheaper and more profitable herds of cattle and flocks of sheep? Owing to the general depression all round, big factories can now buy their thousands of heads of cattle at ridiculously low prices, and if meat is beginning not to pay as you say, it must be because the low first cost has led to over production, and not because a judicious mixture of "horse" would help to increase dividends. The writer in the *Australian Trading World*, which you quote, is sadly behindhand in his history I am afraid.—I am, Sirs, yours truly,

Buenos Ayres, Oct. 9th, 1891. GEORGE MACKERN, M.D.

### FOLK-LORE.

*To the Editors of* THE LANCET.

SIRS,—The following may be of interest to the readers of THE LANCET.

I was staying at Folkestone in the early part of this year, and had occasional talks with a respectable and apparently intelligent bath chairman there. One day a child on the opposite side of the road was attacked with whooping-cough. The bath chairman told me he knew of a certain cure for this complaint, which was to cut some hair from the nape of the child's neck, put the hair between two pieces of bread and butter, and make a dog eat it. He said the dog caught the whooping-cough, and probably died of it, but the child recovered. On my expressing rather strong doubts on the point, he asserted it was positively true. It had proved a cure in the case of his own children. I saw that argument was useless, so I left him disgusted.

I am, Sirs, yours truly,

Nov. 4th, 1891. E. V. HUNT.

### A CAUSE OF FLOODS.

*To the Editors of* THE LANCET.

SIRS,—In reference to the annotation in your last issue on the production and mischief of the floods of the past month, I may add that many river floods seem besides to be due to the obstructions in their beds to the descent of the current. These comprise chiefly dams and weirs for mill works and canalisation, as may be seen on the Thames and Ouse, and old bridges with many piers and low arches, as may be seen on the Avon at Bath and the Esk in Scotland. These all raise the water-level and bed of the rivers, thus preventing an effective scour at flood-time, when the river could be cleaned out.

I am, Sirs, yours faithfully,

November, 1891. VIATOR.

### MORTALITY FROM WILD BEASTS IN INDIA.

INTERESTING returns have just been made of the deaths due last year in India to laceration by wild beasts. It is almost entirely among the native tribes that these deaths occur; and when it is considered that the vast majority of the rural or upland Hindoo population live in wattled huts, and sleep either on the ground or within a few inches of it, the wonder is that more of them are not killed in this way. As many as 2460 native Indians owed their death to wild beasts in the course of 1890, 798 having been destroyed by tigers and leopards, and 87 by wolves, while the cattle that fell a prey to these animals numbered 64,500. The returns for 1889 give a larger proportion of deaths from wild beasts—2724. But then it must be remembered that rewards held out for every beast slain tempt thousands of natives to procure the licence to bear arms *ad hoc*, and that the Government give every encouragement to sportsmen, military or civilian, to hunt the tiger, the bear, the leopard, and the wolf; so that the war of extermination against these denizens of the jungle may be expected to diminish their numbers year by year. As a matter of fact, 60,000 native Indians hold the licence to carry arms for wild beast destruction, but (it may also be stated) they did not obtain rewards for more than 14,604 of such animals killed. Snakes are still the most fatal enemies the Indian native has to encounter. The deaths they caused in 1890 were 21,412, while of snakes themselves as many as 510,650 were destroyed.

*Justitia.*—No doubt the medical attendant who first saw the case had the better opportunity of forming a correct diagnosis.—2. We have frequently replied to a similar question—e.g. THE LANCET, July 26th, 1890, p. 214.

*Dr. T. O. Wood.*—The account of the prosecution referred to was published in the *Manchester City News* of Saturday 17th, or 24th ult.

### EFFECTS OF ANTIPYRIN.

*To the Editors of* THE LANCET.

SIRS,—May I ask you to insert the following case which occurred to a friend of mine, and which I am inclined to attribute to the use of antipyrin? He had for some time back suffered from recurring attacks of sick headache, and his medical adviser prescribed antipyrin in ten-grain doses, repeated three times at intervals of an hour, which usually effected a cure. Upon any symptoms of an attack a dose was taken, which generally had the effect of warding it off; and as the attacks were pretty frequent (say once a week), the quantity of the drug taken was considerable, although the three ten-grain doses were never exceeded. Some months after he began using the drug, my friend, who before had excellent vision, began to notice that though his sight at, say, twelve to fifteen inches focus was as good as ever, his distant sight is greatly impaired. My friend is thirty-two years of age, and until a year or so ago had excellent sight for distant objects. I shall be glad to hear if any of your correspondents have heard of a similar case.

I am, Sirs, yours truly,

Nov. 6th, 1891. ANTIPYRIN.

### AN IMPROVED HORSESHOE.

*Dr. C. R. Illingworth*, Clayton-le-Moors, Accrington, has brought under our notice an improved horseshoe for winter use. Ordinary frost studs with square bases having been put into the shoe in the usual way, a cheese-headed screw, called a "guard screw," is inserted as close as possible to each, the object of which is to prevent the slipping or loosening of the studs. The guard screws may be removed with an ordinary pair of pincers to allow of the reinsertion of new studs.

*Perplexed.*—This is a purely legal question, depending on the construction of the document, on which a solicitor should be consulted.

THE copy of correspondence forwarded by *Mr. George Brown* arrived too late for consideration in our present issue.

### HANDKERCHIEFS FOR SPUTUM.

*To the Editors of* THE LANCET.

SIRS,—I forward herewith a couple of pocket handkerchiefs which I have had dipped in a solution of nitrate of potassium. They offer a cleanly and safe means for the disposal of infectious expectoration where a spittoon is not at hand, as they are burnt after use. Their advantages are: 1. The expectoration is maintained moist for some time by the potassium salt, and cannot blow about as dust. 2. A handkerchief can be rapidly destroyed by throwing it on the fire, or even setting it alight in a grate with a piece of newspaper. 3. The cost is but elevenpence per dozen, before "dipping" and drying, and there is nothing unusual in the appearance of the handkerchief. At meal times their use is an obvious convenience. Whatever theory we hold regarding the danger of sputum dust, the above method appears to me to be practical and cleanly, and more likely to be adopted when the cost is about the same as "washing."

I am, Sirs, your obedient servant,

Davos Platz, November, 1891. A. TUCKER WISE.

ERRATA.—In Dr. Dudfield's letter, printed last week, two misprints escaped correction. In line 6, p. 1069, for "births" read *houses*, and in line 8 for "and" read *over*.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

COMMUNICATIONS, LETTERS, &c., have been received from—Dr. Althaus, London; Dr. Alderson, London; Dr. Aveling, London; Mr. Arnison; Mr. G. Alexander, London; Dr. Anningson, Cambridge; Miss H. Allen, Alloa, N.B.; Mr. T. B. Browne, London; Messrs. Boake, Roberts, and Co., London; Mr. J. M. Bennett, Liverpool; Dr. J. M. Bleyer, New York; Mr. Browne, Poultry; Dr. Bernacchi, Italy; Messrs. Bryce and Rumpff, Manchester; Mr. B. Baker, Brentwood; Dr. Bahadhurji, Port Said; Mr. Black, London; Mr. G. Brown; Messrs. Burroughs and Wellcome; Dr. R. W. Barnet, London; Messrs. Donald Currie and Co., London; Dr. Cagney, London; Messrs. Cockell and Bryan, West Hartlepool; Mr. Chamberlain, Nottingham; Messrs. Coleman and Co., Norwich; Dr. Coombs, Bedford; Mr. Cowper, Shanklin; Mr. D. Currie, Glasgow; Mr. Chatterton, Chicago; Mr. Claremont, London; Dr. J. W. Collins, London; Dr. Dudfield, London; Mr. Dickinson, Liscard; Mr. Devereux, Tewkesbury; Messrs. Duncan, Flockhart, and Co., Edinburgh; Mr. Edwards, Chester; Mr. Eames, Nottingham; Dr. Frost, London; Mr. G. Foy, Dublin; Dr. Fanning; Mr. Fischer, Jena; Mr. Freer, Llandudno; Dr. Foxwell, Birmingham; Mr. Green, London; Dr. P. R. Griffiths, Cardiff; Mr. Green, Bromyard; Mr. L. Humphry, Cambridge; Mr. Hargreaves, London; Mr. Hunt, Manchester; Dr. Harley, London; Mr. Hurst, Folkestone; Dr. Whiteside Hime, Bradford; Mr. Hanford; Mr. Hornibrook, London; Mr. R. Hill, Leamington; Dr. Hedley, Brighton; Mr. Harrold, London; Mr. A. Harvey, London; Mr. R. K. Johnston, Dublin; Mr. Johnson, Manchester; Mr. Jessop, Grimsby; Mr. Keener, Chicago; Mr. Keely, Nottingham; Surgeon-Major Keith, Hyderabad; Dr. J. M. Lawrie, Weymouth; Mr. Lamb, London; Mr. Lawrence, Barnstaple; Mr. Little, London; Dr. Loudon, Arundel; Mr. Lescher, London; Dr. Lambert, Liverpool; Mr. Lockwood, London; Messrs. Ledger, Smith, and Co., London; Mr. Moullin, London; Messrs. Mardon Bros., Bishop Stortford; Dr. Mapother; Dr. Macnamara; Dr. Mackern, Buenos Ayres; Miss Manning, Torquay; Dr. Macdougall, Cannes; Mr. Morgan, Charing-cross; Dr. Mackinnon, Damascus; Mr. Macdonald, Liscard; Miss McGregor, Hampstead; Dr. R. Neale, Hampstead; Dr. Ogle, Oxford; Major Pead, Dulwich; Mr. Pratt, Darlington; Mr. Pinchard, Taunton; Mr. Pentland, Edinburgh; Mr. Rixon, Ealing; Mr. Mayo Robson, Leeds; Messrs. Richardson, Leicester; Messrs. Riddle and Co., London; Mr. Ryan, co. Wicklow; Mr. Renton, Berwickshire; Dr. Robertson, Glasgow; Mr. Swan, Monaghan; Dr. Strahan; Mr. M. Smale, London; Dr. Struthers, Edinburgh; Messrs. Smith, Elder, and Co., London; Dr. Spencer, London; Dr. Shepherd, Pau; Dr. Heywood Smith, London; Mrs. Sharman, London; Mr. Salway, Dartmouth; Mr. G. A. Sutherland; Mr. Sellar, Edinburgh; Dr. G. C. Smith, London; Dr. Turrell, Oxford; Dr. Tooth, London; Dr. J. T. Thompson, Cardiff; Dr. Vogelsang, Altrincham; Miss Worthington; Dr. Wynn Westcott, London; Dr. H. Ward, London; Messrs. Whitehead and Co., Manchester; Dr. Outterson Wood, London; Messrs. Whitfield and Co., Birmingham; Dr. Willington; M.R.C.S.; Reuter's Telegram Co., London; B. F. D.; McD.; Qualified; Cleanliness; Physician and Surgeon; Uninsured; L.R.C.P.; Perplexed; E. L. R.; A Country Doctor; J. R. C.; Surgeon, London; Partner, London; Liquor Carnis Co., London; J. B., Liverpool; Royal Infirmary, Derby; Kent and Canterbury Hospital; Royal Infirmary, Bristol; Secretary, Queen's Hospital, Birmingham; G. H., Rickmansworth; Publisher, *Bath Chronicle*; Spes, London; Fides, London; Maltine Manufacturing Co., London; A Senior Fellow.

LETTERS, *each with enclosure*, are also acknowledged from—Mr. Smith, London; Mr. Hayden, Baldock; Mr. Norman, Criccieth; Mr. A. De St. Dalmas, Leicester; Mr. McConaghy, Birkenhead; Messrs. White and Son, London; Miss Malleson, Winchcombe; Messrs. Maclehose and Sons, Glasgow; Mr. Wand, Leicester; Messrs. Freer, Hett, and Hett, Brigg; Miss Mainwaring, Eastbourne; Messrs. Richards and Co., London; Dr. Keith, London; Mr. Todd, Selby; Messrs. Braun and Co., California; Mr. Tyte, Minchinhampton; Messrs. Curshaw and Co., St. Helens; Mr. Birmingham, Queensland; Messrs. Hooper and Johnson, Barnstaple; Mr. Gwynne, Bangor; Messrs. Curtis and Co., London; Mr. Davidson, Cowbridge; Mr. Sers; Messrs. Bullock and Co., London; Dr. Haviland, Douglas, I.W.; Mr. Potter, Great Clacton; Mr. Carruthers, Leith; Mr. Mechan, Wigton; Mr. Adams, Ashbourne; Mr. Pike, St. John's, N.F.; Mr. Livingstone, Inverness; Mr. McMordie, Belfast; Dr. McDougall, Runcorn; Dr. Boreham, Torquay; Mr. Downs, Uddington; Mr. Beckett, Leicester; Mr. Jennings, Hull; Mr. Godfrey, Northampton; Mr. Dobbs, Bungay; Mr. Morton, Wingham; Dr. Read, Camberwell; Mr. Walsh, Cardiff; Mr. Snell, Brighton; Mr. Ashby, London; Mr. Jones, Dowlais; Mr. Fitzgerald, Folkestone; Mr. Hutchinson, Newmarket; Mr. Eyton-Jones, Barmouth; Mr. Davis, London; Mr. Wood, Huntingdon; Dr. Bondurant, Alabama, U.S.A.; Dr. Mackenzie, Edinburgh; Mr. Hughes, Bournemouth; Mr. Cuthbal, Cornwall; Mr. Fuge, Taunton; Mr. Phillips, London; Mr. Thorpe, Bradford; Mr. Lang, Bridgewater; Miss Jukes, Weston super-Mare; Dr. Griffith, Ravenglass; Messrs. Whitfield and Pidd, Manchester; Mr. Adye, Bradford-on-Avon; Messrs. Leader and Son, Sheffield; Mr. Butlin, London; Mr. Jones, Preston; Dr. Jones, Birmingham; Mr. Allsop, Shipley; Mr. Mason, Hull; Dr. Swanson, York; Mr. Fiske, Dawlish; Mr. Thin, Edinburgh; Professor Tait, Birmingham; Mr. Behnke, London; Mr. Mackay, Notts; Mr. Manton, Sheffield; Dr. Bingham, Alfreton; Mr. Lindsay, Glasgow; Mr. Harmer, Hawkhurst; Mr. Heywood, Manchester; Dr. Primrose, co. Durham; Miss Byass, Arundel; Dr. Robinson, London; M.D., Leytonstone; W. H., Liverpool; T. A., London; A., Manchester; Hospital for Sick Children, Newcastle-on-Tyne; Genuine, London; Secretary, London Throat and Ear Hospital; Gwalia, London; Secretary, Barnwood House Hospital, Gloucester; W. H. D., Bournemouth; Grove House Private Asylum, Hendon; R. G. T., London; St. John Ambulance Association, Clerkenwell; Medicus, London; Secretary, Hospital for Epilepsy &c., Regent's-park; H. C., London; Norfolk and Norwich Hospital; R. G. T., London; J., London; Secretary, Imperial Life Assurance Society, London; E. C., London; Anglo-Swiss Condensed Milk Co., London; B., London; B. H., London; Secretary, West Ham Hospital; Mater, Bournemouth; H. T. M., London; Medicus, Llangollen; T. G., London; M.R.C.S., Earl's-court; Manager, Longton; W. B., Bridgewater; Hydrastis, London; M. G., Chiswick; Dr. M., Glasgow; Madeira, Burton-on-Trent; B.A., London; 77, Plashet-lane, Upton-park; W., London; Medicus, Margate; Beta, London; Lipos, Winchester; Physician, London; B., Putney; Ready, London; E. C., South Norwood; X. Y. Z., London; Medicus, Liverpool; Urgency, London; Medicus, Leeds; Oculist, London.

NEWSPAPERS.—*Nottingham Guardian, Yorkshire Post, Leeds Mercury, Newcastle Daily Chronicle, Scottish Leader, Bristol Mercury, Liverpool Daily Post, Sussex Daily News, City Press, Scotsman, Birmingham Gazette, Dundee Advertiser, Reading Mercury, Manchester Courier, Mining Journal, Windsor and Eton Express, Surrey Advertiser, West Middlesex Standard, Weekly Free Press and Aberdeen Herald, Windsor and Eton Gazette, Hertfordshire Mercury, Sunday Times, Law Journal, Builder, West Middlesex Advertiser, Metropolitan, Architect, Spectator, Saturday Review, Pharmaceutical Journal, Edinburgh Evening News Insurance Record, Guy's Hospital Gazette, Eastern Daily Press, Melbourne Argus, Liverpool Courier, Sheffield Daily Telegraph, Dramatic Review, Glasgow Herald, Sydney Morning Herald, Newcastle Morning Herald (N.S.W.), Hereford Mercury, Torquay Directory, Dunstable Borough Gazette, Tunbridge Wells Advertiser, Herne Bay Argus, Poole Herald, Dartmouth Chronicle, &c.*, have been received.


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Agent for the Advertisement Department in France—J. ASTIER, 66, Rue Caumartin, Paris.

# THE LANCET SPECIAL SUPPLEMENT ON LIFE ASSURANCE AND THE MEDICAL PROFESSION.

WE were led last year, by reason of facts which were brought to our notice in the course of administering THE LANCET Relief Fund, to adopt the measure of publishing a Special Supplement dealing with the subject of Life Assurance from the medical practitioner's point of view, with the purpose of bringing this important matter prominently under the notice of medical men, and, further, of defining for the information of those upon whose hands the management of this business devolves, what are the special requirements which a policy must meet if it is to be fitted to the exact circumstances of medical practice. The execution of this plan necessitated recourse to the insurance offices on the one hand and to the medical profession on the other, and on both sides we found a readiness to communicate which enabled us to accomplish a large part at least of what we desired. We have reason to think that in both respects our labours have borne fruit. The extent to which our professional brethren have been influenced by the course which we pursued cannot well be determined; but we have more than one reason for the belief that many medical men having their attention drawn to the matter have during the past year made up to some extent for lost time, and secured themselves or those dependent upon them by means of well-considered and, we hope, well-chosen assurances. The results in the other field are much more easily gathered, and in a summary statement which appears in another part of this Supplement a general view is given of the improvements in practice, chiefly such as are intended to deal, in some of its aspects, with the specific requirements of medical men that have been introduced during the past year by the various life assurance offices. From this summary it will be seen that these improvements are neither few nor inconsiderable. They alone would suffice to make an ample return for the trouble taken by our correspondents and ourselves to place this matter in a clear light twelve months ago. But it is also plain that the task, though well begun, is as yet by no means accomplished. On the contrary, we have felt constrained to repeat the experiment of last year at the present time for the purpose of giving fuller expression than was possible upon the first occasion to some of the most pressing wants which are still felt by the assuring public. The particular points to which we chiefly call attention to-day do not indeed affect medical men so exclusively, or even so distinctively, as did those which were brought forward last year. The multifariousness of which we complain is a fault that appeals to the general public no less than to the medical profession, and it no doubt stands as much in the way of the clear understanding and just appreciation of life assurance by the mercantile as by the professional community. The uniformity which, if introduced, would do so much to remove uncertainty and mystery is desirable in the common interest, but it is not the less on that account desirable in the interest of medical men. They as a rule have neither the time nor the inclination to make a study of life assurance. Its general principles they understand, its operation they approve, but their difficulties begin when they find that each particular company proves itself the best in existence by the simple expedient of setting up a private standard of its own, and perplexes comparison with other institutions by minute alterations of detail in its schemes. Hence a most forbidding air of mystery, which is probably in no small degree responsible for the undeniable, though regrettable, fact that life assurance is neglected by many thousands to whom it ought to be a necessary of prime importance. The readiness with which the life assurance offices, upon the whole, have taken into consideration the views which we have heretofore put forward, warrants us in believing that they will approach the questions now raised in no unfriendly spirit. There is no doubt, from the official point of view, much to be said for every one of the peculiarities which in the aggregate produce so bewildering an impression. The very weight of such considerations makes it the more difficult for insurance experts to realise how serious is the obstacle which the multiplicity and variety of their schemes and methods places in the way of a clear understanding of the subject. They hold the clue which unravels all the mystery, and gives them easy mastery of the situation; but to plain men outside the insurance pale it is a disheartening thing to work through a mass of minute distinctions such as furnished the staple of the analyses appearing on p. 1148, and the consequence is that even able and painstaking men in such a matter either choose blindly or not at all. If some coördinating mind were to work upon this mass of elements and reduce them to an orderly whole which a person of ordinary intelligence could understand with no unreasonable effort, and of which the outlines could easily be carried in the memory, there would assuredly result a quickened interest in the subject, which for the assurance offices would mean business, and for the general public thrift. But this is not the time or occasion for labouring our point. Having made it, we must leave it in the hope that those who, between them, are responsible for the conduct of our life assurance business will be both able to discern and willing to remove the difficulty which we have pointed out.

Among the points to which our inquiries have from the first been directed, the cheapening of the cost of assurance to medical men occupies a leading place. This part of our suggestions has been received by no means with unmixed favour. On the contrary, some one or two of the journals which claim to be the organs of insurance opinion have assailed this part of our programme with the most energetic protests. These it may possibly at some future day come in our way to notice. But at present the discussion with the offices themselves is proceeding so pleasantly that it would be positively inartistic to introduce by recrimination a discordant element. We were able last year to enumerate some eight offices which were prepared to accede to the suggestion that a medical man insuring without the intervention of a commission-paid agent should be himself allowed to take the benefit of the commission. On the face of it nothing could be simpler or more equitable. The company is quite prepared to pay a commission to the agent, therefore the payment of the commission must by itself be financially sound. If the agent transact the business he is clearly entitled to the remuneration, and we would be the very last to seek either to disparage his office or to intercept his reward. But agents are employed to diffuse the knowledge and practice of life assurance and to bring proposers to the doors of their several companies. If there comes a man who has found and brought himself, why should the office refuse to give to him the benefit of the commission which he has saved to the company? The only answer that can be given is that the practice for which we argue strikes at the agency system as at present organised. But if so, there may possibly be a fault in the organisation. Fortunately for us, the success of some three or four old offices which have always refused to employ commission-paid agents at all, modest though it is, has been sufficient to give point and emphasis to our contention. The logic of facts is peculiarly inexorable, and will

in time convince even the most logical of men. This is exemplified in the list which we to-day publish of offices with which commission-free policies can be effected. The corresponding list last year contained eight names. This year we are able to give fifteen, and the accessions are certainly not of weak-kneed institutions or institutions of an inferior class. The position which these have taken up to-day others will take up to-morrow, and we entertain no doubt that sooner or later the concession for which we have asked will be frankly yielded on all hands.

The table to which we here refer does not by any means exhaust the list of offices which are, in fact, prepared to make an allowance to medical men in respect of unclaimable commission Thus one of our correspondents says with great simplicity:—"Our cheapest rates are in ordinary cases 5 per cent below the tabular rate, but we do not think it advisable to advertise this." We are bound to respect his scruples, and therefore do not publish the name of his office, although we must confess to being somewhat at a loss to understand what satisfaction he can have found in imparting to us this information under a seal of privacy. But in truth he conveys much more than his words express. What he says other people think, and we doubt not that the worthy managers who austerely say that they offer no special terms to medical practitioners would be found more open to conviction in a suitable case than they are prepared publicly to confess. If our correspondents prefer to carry on the negotiations in this manner, it shall be no part of our office to find fault with them. Our readers now know that if they care to save the commission on their premiums they can do so and yet have a very considerable and a very excellent choice of offices. If they will be at the pains to negotiate about the matter, they can easily extract these terms from many—perhaps from most—of the offices which still hang back from the public announcement of their willingness to treat, and therefore our purpose in the main is accomplished. The principle has been vindicated; its application now presents no serious difficulty, and if any medical man still elects to effect his assurances with an office which denies him this advantage, that will probably be because he has reason to be content to make a substantial sacrifice for the purpose of placing his custom where, in fact, he has chosen to place it. In this, as in other matters, we think that we can see an advantage in uniformity; but if uniformity cannot be secured, then the next best thing is that the divergencies, whatever they are, should be frankly recognised and clearly understood. To this good end our tabulated statements will contribute somewhat.

## IMPROVEMENTS INTRODUCED DURING THE PAST YEAR.

IN the forefront of our inquiries addressed to the Life Assurance Companies we put the question: "What, if any, improvements have been introduced during the past year to meet the case of medical practitioners, as set forth in THE LANCET of Nov. 15th, 1890?" Simple as it is, this question has been in many instances misunderstood, and some of our correspondents have drawn attention to matters in no sense directed to meet the case of medical practitioners, while others have apparently done themselves less than justice by refraining from putting forward matters which would very fairly have fallen within the definition. The following digest of the replies received must not, therefore, be taken to be more than an imperfect statement of what has been done, chiefly within the past twelve months, to adapt the provision made by the Assurance Companies to the ascertained wants of a medical practitioner. It conveys as nearly as possible in the language of our correspondents the effect of the answers made to the question quoted above.

## ALLIANCE ASSURANCE COMPANY.

LIFE DEPARTMENT.—Scale of fees and commission to agents, and to members of the medical profession who may effect insurances direct with the company, and not through agents.

*On New Policies.*

(*a*) A fee of £1 per cent. on the sum assured, after payment of the first year's premium, on policies taken out under the following classes of assurance:—

Ordinary whole life assurances: Uniform premiums.

Ordinary whole life assurances: Single or limited premiums. Endowment assurances.

(*b*) A fee of 10*s.* per cent. on the sum assured, after payment of the first year's premium, on policies taken out on the half-premium scale, with a further fee of 10*s.* per cent. on the sum assured on payment of the first enhanced premium.

(*c*) A fee of 10*s.* per cent. on the sum assured, after payment of the first year's premium, on term policies and survivorship assurances.

MEMO.—Where the premiums are payable half-yearly or quarterly, a proportionate part of the fee will be allowed on payment of the premium.

*On Renewal Premiums.*

A commission of 2½ per cent. on the future premiums, after the first year, on all the above classes of assurances.

## ATLAS LIFE OFFICE.

A guaranteed surrender value has been made part of the contract, such surrender value being *not less than* 40 per cent. of all the premiums paid except the first.

Policies have been made unconditional.

A special scale of premiums has been computed and published under the title of the Atlas Cost Price Scheme. The following are sample rates:—

*Annual Premium per cent. under Atlas Cost Price Scheme.*

| Age. | Whole of Life. | Endowment Assurance at 60. |
|---|---|---|
| | £ s. d. | £ s. d. |
| 25 | 1 14 8 | 2 5 1 |
| 30 | 1 18 6 | 2 14 7 |
| 35 | 2 3 9 | 3 8 5 |
| 40 | 2 10 11 | 4 9 9 |
| 45 | 3 0 9 | 6 6 10 |
| 50 | 3 13 10 | 10 2 3 |
| 55 | 4 12 1 | — |
| 60 | 5 17 2 | — |

## BRITISH EMPIRE MUTUAL LIFE ASSURANCE COMPANY.

The Company has introduced exceptionally low rates for non-participating policies.

## CALEDONIAN LIFE OFFICE.

While for the majority of the public the best and most attractive forms of life assurance are those which contain a considerable admixture of the investment element, there are many persons so situated as to be able to dispense with that element in their life policies. An individual, in the class referred to, possesses—let us suppose—opportunities for investing his savings to great advantage in his own business; and he has reasonable ground for anticipating that if he should survive for twenty or twenty-five years he will accumulate in that period a modest competency, if not a fortune. The kind of assurance which such a man requires is not one payable at sixty or death, nor one with premiums limited to twenty payments, nor even an ordinary whole life policy. These all cost too much for his purpose, and yield too little in the shape of immediate assurance. What would exactly meet his requirements is a temporary assurance for twenty-five years. This would secure to him during the time he really needs it an assurance of about double the amount which he could obtain for the same premium under the cheapest of the ordinary plans.

Unfortunately, the existing Assurance Companies make little or no provision for such a case, their tables of rates for temporary assurance being seldom extended beyond periods of seven, or ten, or fourteen years. The directors of the Caledonian Insurance Company have resolved to supply this want by publishing the annexed tables. Terms for cases not included in the tables may be ascertained on application to the company.

*Surrender Values.*—It is not usual to allow any surrender value for a temporary assurance; but in connexion with this scheme an equitable surrender value will be allowed (which must necessarily be of small amount) for unexpired policies on which not fewer than five yearly premiums have been paid. The value must be applied for while the policy is in force.

*Annual Premiums for a Temporary Assurance of £1000, payable at death if within the term of years undernoted.*

SPECIMEN RATES.

| Age next birthday. | Twenty years. £ s. d. | Twenty-five years. £ s. d. | Thirty years. £ s. d. |
|---|---|---|---|
| 25 .. .. .. | 11 15 0 .... | 12 8 4 .... | 13 4 2 |
| 30 .. .. .. | 13 7 6 .... | 14 7 6 .... | 15 10 0 |
| 35 .. .. .. | 15 12 6 .... | 17 0 10 .... | 18 15 10 |
| 40 .. .. .. | 18 18 4 .... | 21 1 8 .... | 23 8 4 |
| 45 .. .. .. | 24 3 4 .... | 27 3 4 | — |

## CHURCH OF ENGLAND LIFE OFFICE.

The system of "perfected" pensions is entirely new, and has been devised to meet the want of those (and they are doubtless many) who desire to put aside each year some portion of their income as a permanent provision for old age. The ordinary system of endowment assurance no doubt meets the want to some extent, but it is anticipated that the annual income during the later years of life provided by the "perfected" pensions system will in many cases be found preferable, and that they will therefore be largely resorted to by those desiring a safe and remunerative investment of this nature.

The working of the system is best explained by an example. A man aged thirty may, by an annual payment of £15 only until age sixty-five, secure for himself an income thereafter of no less than £100 per annum; while should he unfortunately die before reaching that age, the whole of the premiums paid by him would be returned to his representatives.

## CLERICAL, MEDICAL, AND GENERAL LIFE ASSURANCE SOCIETY.

### ASSURANCE AT PRIME COST.

One of the wants of the present day is a table of whole-life premiums which, while making the least possible demand on the resources of the assured, shall at the same time admit the policies to full bonus advantages. The annexed table of reduced premiums, *which are believed to be lower than any hitherto published*, has been framed to meet this want. Being below the mathematical premiums for the several risks provided in the Society's full premiums, these reduced premiums may properly be said to supply "assurance at prime cost." But being also below the Society's non-profit rates, which furnish guaranteed assurances at fixed prices, it is obvious that they cannot, as is the case with the non-profit rates, be guaranteed as sufficient for all time and under all circumstances. They depend, in fact, on the realisation of a certain ratio of profit, and in the event of the profit at any division being insufficient, the sum assured will need to be charged with payment of such a sum as will make good the deficiency, unless the assured prefer to pay off the balance due to the Society. So large and so consistent, however, have been the profits of this Society that there is little likelihood of any such deficiency arising.

The new premiums are at all ages 75 per cent. only of the ordinary whole-life, with profit rates, the Society advancing the remaining 25 per cent. The 25 per cent. so provided by the Society, accumulated at 5 per cent. interest in advance, will be a charge on the current bonus. If death should occur within the quinquennial bonus period, the interim bonus will exactly meet the current charge, and allow of the sum assured being paid without deduction. If, on the other hand, the policy should survive the quinquennial period and share in the declared bonus, it may be expected that the cash bonus allotted at each division will more than meet the current charge. Taken at the highest—that is, in the case of policies which have been in force throughout the entire quinquennium—the sum due to the Society will never exceed 29 per cent. of the full premiums assumed to have been paid in the five years. If, then, the cash bonus be also 29 per cent. of such premiums, the account will be exactly balanced; but in the more probable event of the ratio of cash bonus being maintained at, say, the rate of 1887, when it averaged 33½ per cent., there will be a balance in favour of the assured of about 4½ per cent. Thus a man of thirty at entry, assured for £1000, would, in respect of any complete quinquennium, pay five premiums of £18 5*s.* 10*d.* each, instead of five of £24 7*s.* 6*d.* each. The balance of £6 1*s.* 8*d.* per annum advanced by the Society, accumulated at interest, would amount at the end of the quinquennium to £35 5*s.* 8*d.*; but, inasmuch as the cash bonus would, by hypothesis, be £40, there would be a balance in favour of the assured of £4 14*s.* 4*d.*

This surplus cash bonus may, on its declaration, either be at once received by the assured, or, if he prefer it, be converted into an equivalent reversionary bonus, *payable with the sum assured in the event, and in the event only, of death occurring subsequently to the attainment of an age to be stated in the policy.*

The arrangement for paying reduced premiums may, at the option of the assured, be determined at any division of profits, when the policy will rank in every respect as an ordinary full-premium assurance.

*Reduced Annual Premium for an Assurance of £100 payable on the death of a healthy person.*

| Age next birthday. | Annual premium. £ s. d. | Age next birthday. | Annual premium. £ s. d. |
|---|---|---|---|
| 20 .. .. | 1 7 11 ..... | 40 .. .. | 2 8 9 |
| 25 .. .. | 1 11 11 ..... | 45 .. .. | 2 16 8 |
| 30 .. .. | 1 16 7 ..... | 50 .. .. | 3 8 1 |
| 35 .. .. | 2 1 10 ..... | 55 .. .. | 4 5 4 |

The deferred age, attainment of which would be a condition of the Reversionary Bonus vesting, would be 65 for entrants not exceeding 40; 70 for entrants over 40 and not exceeding 55; and 75 for all the later ages given in the table.

## EAGLE LIFE OFFICE.

The only difference which could be made in the case of a medical practitioner would be that, in the event of his assuring his life without the intervention of an agent, the usual commission would be allowed to him, thus extending to him the same benefit as that usually granted to solicitors.

## EDINBURGH LIFE OFFICE.

The Company having prior to Nov. 15th, 1890, adopted a scheme of life assurance and pensions for medical men and their widows, have found it continue to meet the want of the profession. THE LANCET article of last year stimulated an interest in the subject of life assurance, and the Company have since received many applications and issued many policies under their scheme.

## EQUITABLE LIFE ASSURANCE SOCIETY.

The system of reduced premiums recently introduced appears specially adapted for the medical profession. Under this system, three-fourths only of the ordinary premium need be paid, the balance of one fourth being accumulated against the policy, to be discharged at valuation times out of the bonus, in which the policies share equally with ordinary assurances. Taking an example on the basis of past profits, it is found that a man aged thirty at entry would pay an annual premium of £20 for a £1000 policy; at the end of twenty years the bonus suffices, not only to extinguish the debt, but also to purchase a further permanent reduction of premium of 25 per cent.; at thirty years there is no debt and no further premium to pay, and the policy will share in all profits throughout its duration.

## EQUITABLE, U.S.A.

In 1888 this Society introduced a form of life assurance specially applicable to medical and other professional men, called the "Free Tontine Policy." The premium under this policy is somewhat lower than the rates charged by the generality of offices for ordinary assurance. It differs, however, from the ordinary policy in the disposal of the profits, which in the case of the Free Tontine Policy are applied to make the policy payable in ten, fifteen, or twenty years from the date of the assurance, either in the form of cash, annuity, or paid-up assurance at the option of the assured.

## HAND-IN-HAND LIFE INSURANCE SOCIETY.

All policies, whether on the lives of medical practitioners or others, become void by suicide only if the suicide be committed within thirteen months of its date of issue, instead of five years as formerly. The policy, however, remains in full force so far as any other person or persons shall then have a *bonâ-fide* interest therein, which shall have been previously acquired for a valuable consideration, and of which due notice shall have been received by the Society; and in all cases where the policy has been in force for at least thirteen months the full sum insured is paid.

## IMPERIAL INSURANCE COMPANY.

The scheme of indemnity insurance introduced by the Imperial Life Office anticipated the requirements of the medical profession as set forth in THE LANCET of Nov. 15th, 1890. It provides insurance at the lowest cost for terms of years up to forty-five, fifty, fifty-five, or sixty.

## NORWICH UNION MUTUAL LIFE OFFICE.

Our existing tables supply the various special requirements indicated in THE LANCET of Nov. 15th, 1890 (which are not of course confined to medical men), but we are prepared to quote rates for any other combination of insurance which can be suggested. Some of our newer tables, particularly the endowment table with guaranteed bonuses, ought to be very suitable for medical men. The close relations which usually exist between the insurance agent and the medical examiner will generally make the latter unwilling to enter into competition with the former for commission. But where there is no difficulty of that kind, we should be quite prepared to treat any medical practitioner applying to us direct in the same manner as if he were a solicitor, giving him the benefit of the usual commission.

## PATRIOTIC ASSURANCE COMPANY.

An allowance of 5 per cent. from the published rates will be made.

## PELICAN LIFE INSURANCE COMPANY.

The Pelican is prepared to issue policies payable at death, either with or without profits, the premiums to be payable either during the whole of life or for a limited number of years only, so that in old age there are no more premiums to pay, although (in the case of participating policies) the assured continue to share in the profits of the Company.

The Company also issues endowment insurances, with and without profits. In the former case the bonus is distributed on the tontine principle, and large contingent additions may be anticipated.

The Company is also prepared to accept a reduced premium for the first five years (without any debt attaching to the policy) to meet the case of insurers whose incomes are progressive.

The Company's conditions are in all cases most liberal.

To facilitate the insurance of the lives of medical men they are prepared to allow a commission of 10 per cent. on the first premium and 5 per cent. on renewals, where the proposal is made, and premiums are paid direct to the head office, and not through an agent.

To the foregoing may be added that the Company is also prepared to issue short term policies—i.e., policies payable only if death takes place within a given period. Such insurances are not usually required for longer terms than seven years, but rates will be quoted on application for any period that may be desired.

All published rates of the Company—except those for short term insurance—are subject to the rebate referred to in THE LANCET (viz., 10 per cent. on the first premium, and 5 per cent. (on renewals), provided the business is arranged direct with the head office, and not through an agent. For short term insurances the rebate allowed is 5 per cent. on each payment.

## POSITIVE LIFE ASSURANCE COMPANY.

Any medical practitioner proposing without the intervention of an agent can deduct 10 per cent. from first year's premium and 5 per cent. from renewals.

## RELIANCE LIFE OFFICE.

The directors have resolved to make an allowance to the medical profession in respect of assurances arranged direct with this office, and not passing through any intermediary or agent. This allowance or rebate will be applicable to policies effected under Tables I., II., III., IV., V., and VI. of the Prospectus, and will be at the rate of 10 per cent. on the first year's premium, and 5 per cent. upon the second and subsequent renewal premiums during the continuance of the assurance.

## SCOTTISH UNION AND NATIONAL INSURANCE OFFICE.

The premiums for assurances, without profits, payable at death, or in the lifetime of the assured, have been recently materially reduced. This is a form of benefit particularly suitable for the requirements of medical men. The directors have recently had under consideration the modification of rates under some of their tables, but they have not yet had them printed in prospectus form.

### EXTRACT FROM ENCLOSURE.

TABLE II.—*Early Bonus Scheme (E.B.) for immediate family provision and other purposes. Half-premium rates for assuring £100, with right to profits.*

| Age next birthday. | Yearly, first five years. | Yearly thereafter. |
|---|---|---|
| | £ s. d. | £ s. d. |
| 20 | 1 1 0 | 2 3 3 |
| 25 | 1 2 5 | 2 10 0 |
| 30 | 1 5 4 | 2 17 0 |
| 35 | 1 7 2 | 3 5 0 |
| 40 | 1 10 4 | 3 15 0 |
| 45 | 1 16 7 | 4 10 0 |
| 50 | 2 4 2 | 5 11 0 |
| 55 | 2 16 0 | 7 0 0 |

Policies at these rates are not subject to arrears of premium or other debt, and are adapted to meet the wants of persons whose incomes are progressive. They enter the profit class after payment of the first full premium.

This Table is applicable only to first-class lives resident in the United Kingdom.

TABLE V.—*Short Period Assurances. Annual premiums for assuring £100 payable at death, if that shall happen within one, five, or seven years. Without profits.*

| Age next birthday. | One year. | Five years. | Seven years. |
|---|---|---|---|
| | £ s. d. | £ s. d. | £ s. d. |
| 20 | 0 16 6 | 1 0 0 | 1 1 0 |
| 25 | 0 16 6 | 1 0 0 | 1 1 0 |
| 30 | 0 17 0 | 1 2 0 | 1 2 10 |
| 35 | 0 17 10 | 1 3 9 | 1 5 0 |
| 40 | 0 18 10 | 1 5 10 | 1 7 8 |
| 45 | 1 1 0 | 1 10 4 | 1 13 0 |
| 50 | 1 4 6 | 1 17 0 | 2 0 8 |

Policies at these rates are for temporary use only, such as collateral security for loans repayable within a few years, partnerships for limited periods, &c., and never acquire a surrender value.

These reduced rates are applicable only to first-class lives resident in the United Kingdom.

TABLE VII.—*Special Bonus Scheme (D.B.) Profit policies at non-profit rates. Half-premium rates for assuring £100, with right to profits. For immediate family provision and other purposes.*

| Age next birthday. | Yearly, first five years. | Yearly thereafter. |
|---|---|---|
| | £ s. d. | £ s. d. |
| 20 | 1 1 0 | 1 17 6 |
| 25 | 1 2 5 | 2 1 3 |
| 30 | 1 5 4 | 2 6 6 |
| 35 | 1 7 2 | 2 14 6 |
| 40 | 1 10 4 | 3 6 0 |
| 45 | 1 16 7 | 4 1 0 |
| 50 | 2 4 2 | 5 0 0 |
| 55 | 2 16 0 | 6 10 0 |

Policies at these rates are not subject to arrears of premium or other debt, and are adapted to meet the wants of persons whose incomes are progressive. They enter the Profit class of their scheme after payment of the first *full* premium.

This table is applicable only to first-class lives resident in the United Kingdom.

TABLE IX.—*Provision for old age combined with immediate family provision. Assurances payable on attaining a specified age, or at death if it happen sooner. Without profits.*

| Age next Birthday. | Annual Premium for £100 payable at Death, or at Age 65. | Age 60. | Age 55. | Age 50. |
|---|---|---|---|---|
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| 20 | 1 17 6 | 2 2 0 | 2 8 0 | 2 16 0 |
| 25 | 2 3 10 | 2 8 9 | 2 16 4 | 3 8 0 |
| 30 | 2 10 10 | 2 17 11 | 3 9 2 | 4 7 5 |
| 35 | 3 1 11 | 3 11 3 | 4 9 0 | 6 0 9 |
| 40 | 3 14 11 | 4 11 10 | 6 2 10 | — |
| 45 | 4 16 5 | 6 6 3 | — | — |
| 50 | 6 11 8 | — | — | — |

Rates for other ages supplied on application.

Policies at these rates secure immediate provision for wife and family in event of the assured's premature death, or provision for his own old age.

## STANDARD LIFE ASSURANCE COMPANY.

A new table of rates intended to meet the requirements of the medical profession, whereby a small premium is payable during the early years of the assurance, and the total premiums are limited to twenty-one years, thus affording relief from the payment of premiums in the declining years. A copy of the pamphlet issued in December last is here extracted:—

### LIFE ASSURANCE FOR THE MEDICAL AND OTHER PROFESSIONS.

The Standard Life Assurance Company grant policies by a variety of different systems, amongst which the following are most commonly in use—the assurances being either with or without participation in profits:—

I.—Policies payable at death—

1. Premiums payable for life.
2. Premiums payable for any given number of years and then to cease.
3. A small premium for the first five years, and doubling thereafter during the rest of life, called the Half-Premium System.

II.—Policies payable at a given age, or at death if earlier, called endowment assurances. Premiums payable either for the whole duration of the policy, or for a shorter given number of years.

III.—Partnership policies payable at the first death of two or more lives.

IV.—Policies ceasing after any number of years, called short term policies.

The terms for these assurances, at any age or for any period, may be ascertained on application.

The following combinations of No. I. (2 and 3) above referred to are now put forward for the first time in order to meet what the correspondents of THE LANCET have defined as the special wants of medical men—viz.:

(*a*) A small premium in the early years of assurance;

(*b*) Relief from the burden of premiums in declining years.

TABLE A.—*Premiums ceasing after twenty-one years. Reduced Rates in the earlier years. Annual Premiums for Assurance of each £100 at death.*

WITH PROFITS.—ANNUAL PREMIUMS.

| Age next birthday. | First seven years. | Second seven years. | Third seven years. |
|---|---|---|---|
| | £ s. d. | £ s. d. | £ s. d. |
| 20 | 2 0 9 | 3 1 2 | 4 1 6 |
| 25 | 2 4 8 | 3 7 0 | 4 9 4 |
| 30 | 2 9 1 | 3 13 8 | 4 18 2 |
| 35 | 2 14 6 | 4 0 11 | 5 7 10 |
| 40 | 2 19 7 | 4 9 5 | 5 19 2 |

Premiums ceasing thereafter.

WITHOUT PROFITS.—ANNUAL PREMIUMS.

| Age next birthday. | First seven years. | Second seven years. | Third seven years. |
|---|---|---|---|
| | £ s. d. | £ s. d. | £ s. d. |
| 20 | 1 14 6 | 2 11 9 | 3 9 0 |
| 25 | 1 18 1 | 2 17 2 | 3 16 2 |
| 30 | 2 2 2 | 3 3 3 | 4 4 4 |
| 35 | 2 6 9 | 3 10 2 | 4 12 6 |
| 40 | 2 12 1 | 3 18 2 | 5 4 2 |

Premiums ceasing thereafter.

TABLE B.—*Premiums ceasing after twenty-one years. Reduced Rates in the earlier years. Annual Premiums for Assurance of each £100 at age 60, or at death if earlier.*

WITH PROFITS.—ANNUAL PREMIUMS.

| Age next birthday. | First seven years. | Second seven years. | Third seven years. |
|---|---|---|---|
| | £ s. d. | £ s. d. | £ s. d. |
| 20 | 2 7 7 | 3 11 5 | 4 15 2 |
| 25 | 2 12 11 | 3 19 5 | 5 5 10 |
| 30 | 2 19 1 | 4 8 8 | 5 18 2 |
| 35 | 3 6 3 | 4 19 5 | 6 12 6 |

Premiums ceasing thereafter.

WITHOUT PROFITS.—ANNUAL PREMIUMS.

| Age next birthday. | First seven years. | Second seven years. | Third seven years. |
|---|---|---|---|
| | £ s. d. | £ s. d. | £ s. d. |
| 20 | 2 0 3 | 3 0 5 | 4 0 6 |
| 25 | 2 5 4 | 3 8 0 | 4 10 8 |
| 30 | 2 11 3 | 3 17 0 | 5 2 6 |
| 35 | 2 18 4 | 4 7 6 | 5 16 8 |

Premiums ceasing thereafter.

In the event of a policy-holder desiring to discontinue his policy, a liberal surrender value is allowed, or he may claim in exchange a paid-up policy, on which no further premiums are payable, for a considerably larger amount. *The amount of such paid-up policy in the case of Table A will not, while the life assured is under fifty, be less than the total amount of premiums paid.*

NOTE WITH REFERENCE TO SHORT TERM POLICIES.—In the article contained in THE LANCET of Nov. 15th, 1890, to which reference is made, short term assurances for longer periods than are usually offered—say for twenty, twenty-five, or thirty years—are recommended. The Standard Life Assurance Company are quite prepared to grant such policies at moderate rates, but this form of assurance does not, in their experience, meet with acceptance from the assuring public of any class, except occasionally to cover some special risk of a well-defined character. No one can tell what the state of his health may be at the end of such a period, and he may then be very desirous to renew his policy, but find himself unable on account of the state of his health to do so; or if in good health he will still feel the higher premium at his increased age a serious tax upon him. Nor, again, can he be certain of finding remunerative investment for his savings year by year, especially if they are small, so as to place him in a position independent of a life assurance as the term for which his policy is taken expires.

On the contrary, the benefit of a policy as an investment is being more fully realised and taken advantage of every day.

A glance at the following figures will show how the two systems of investment may be compared.

## A "STANDARD" POLICY AS AN INVESTMENT.

The following table contrasts the benefit of a Standard life policy at ordinary whole of life rates with other investments, and shows how the policy is for more than thirty years greatly the more profitable, even assuming that the private investor would have the opportunity of placing out with safety all his savings year by year, without loss of time, at compound interest:—

*Table showing the result of a Standard Life Policy as compared with other Investments. Age of Assured and Investor 30 next Birthday.*

| Years expired. | Amount of Policy and Bonuses (Premium £24 9s. 2d. per annum for life). | Amount of £24 9s. 2d. per annum accumulated at compound interest at 3 per cent. | Difference in favour of Life Policy over other Investments. |
|---|---|---|---|
| | £ | £ s. d. | £ s. d. |
| 1 | 1000 | 25 8 10 | 974 16 2 |
| 2 | 1000 | 51 2 10 | 948 17 2 |
| 3 | 1000 | 77 17 4 | 922 2 8 |
| 4 | 1000 | 105 7 11 | 894 12 1 |
| 5 | 1075 | 133 14 11 | 941 5 1 |
| 6 | 1075 | 162 19 0 | 912 1 0 |
| 7 | 1075 | 193 0 8 | 881 19 4 |
| 8 | 1075 | 224 0 4 | 850 19 8 |
| 9 | 1075 | 255 18 7 | 819 1 5 |
| 10 | 1150 | 288 16 0 | 861 4 0 |
| 15 | 1225 | 408 10 11 | 776 9 1 |
| 20 | 1300 | 676 18 4 | 623 1 8 |
| 25 | 1375 | 918 9 8 | 456 10 4 |
| 30 | 1450 | 1198 10 5 | 251 9 7 |
| 35 | 1525 | 1523 3 3 | 1 16 9 |

NOTE.—The rate of bonus here assumed is that which has been declared on the Standard Company's with profit policies (equal scheme) from the commencement—viz., £1 10s. per cent. per annum, with an intermediate bonus at the rate of £1 per cent. on policies of ten years' standing, as recently declared. It must not, however, be understood that any particular rate of bonus is guaranteed by the Company in the future.

## ROYAL EXCHANGE ASSURANCE CORPORATION.

*Short Term or Temporary Assurances.*

Policies taken out under this system cover the contingency of death taking place within a selected term of years, at the expiration of which the contract is at an end. A special leaflet is issued, which gives rates of premium for extended terms of years. The rates of premium are consequently very much lower than those on whole life policies, and represent the minimum cost of assurance protection.

## UNIVERSITY LIFE ASSURANCE SOCIETY.

*Life assurance for those wishing to assure their lives for the smallest possible outlay.*

The non-profit table for the assurance of *fixed sums* at death (with no increase by bonus additions) are lower than is usual in other offices, but owing to the high rate of profit of this office, a scale of premiums has been devised, called the "Specially-reduced Premiums, with Profits," which is at many ages even lower than the non-profit scale, and which, nevertheless, entitles the holder of a policy to share in profits. These rates are four-fifths of those with full profits. The remaining one-fifth is advanced by the Society, and may be repaid out of the bonus, which is at the same rate as on the policies at full premiums.

*Annual premiums for each £100 assured.—(Specimen rates.)*

| Age. | £ s. d. | Age. | £ s. d. |
|---|---|---|---|
| 25 | 1 16 7 | 40 | 2 11 8 |
| 30 | 2 0 7 | 45 | 2 19 3 |
| 35 | 2 5 6 | 50 | 3 10 0 |

## THE YORKSHIRE LIFE INSURANCE COMPANY

Are willing to allow agents' commission in the case of medical practitioners—i.e., 10 per cent. on the first year's premium and 5 per cent. on renewal.

## WESTMINSTER AND GENERAL LIFE ASSURANCE ASSOCIATION.

The rates for non-profit policies have been materially reduced, and a new table has been issued giving an increased provision for widows and orphans in the event of early death.

## CONDITIONS OF ASSURANCE.

A point to which, in our inquiries made for the purpose of this Supplement, very special attention has been given is the ascertaining of the various conditions to which policies of assurance are made subject. It is well known that no common form of life assurance contract prevails, and during the past

year the uncertainty which results from the very great and very inconvenient diversity of policy forms has been strongly impressed upon the Editors of THE LANCET. It will probably be a matter of no little surprise to our readers to learn from the following analysis how great that diversity is. The analysis is not exhaustive, for the reason that we have not in all cases been supplied with the copy of a policy form for which we have asked. When this material has been withheld it has been impossible for us to include in the following list the office which has failed to furnish it. In some instances, where returns have been furnished, our correspondents have apparently supposed that a statement as to the conditions to which their policies are subject would serve our purpose equally well with a policy form. Thus, for example, the secretary of one company who does not supply a copy of a policy form has been at the pains to summarise its conditions for us in his own way, to the effect that "there is no condition save payment of the renewal premium from time to time and not to transgress the above limits"—i.e., *of residence*—"or enter naval or military service. Whole-world policies are granted in ordinary cases." Now we should have been glad to avail ourselves of this information and to furnish it to our readers if we were satisfied that the writer's attention had been directed to an important condition very common in assurance policies, and yet very generally omitted from such summaries of conditions as usually occur in prospectuses and the like documents. We refer to the condition that the policy shall be valid only if the declarations contained in the proposal made to the company by the assured shall be true, and true not only in intention, but also in fact. This condition—a very reasonable one—was a few years ago universally imposed upon life assurance policies, but in recent years it has been given up by some of the companies, by such, that is, as have become pioneers in the task of simplifying the life assurance contracts. Hence it is no longer a term universally imposed, and it becomes a matter of interest to an intending proposer to know whether this, among other stipulations, will or will not be included in his policy. It is of course possible that our correspondent is as alive to this point as we ourselves, but one would have expected that if present to his mind it would have been referred to pointedly in his summary, just as the detail about granting whole-world policies is referred to. Upon a rigid interpretation of the language that he uses, this remark is surplusage, having been, strictly speaking, implied in what precedes; but the somewhat special nature of the provisions explains and justifies a reference to it which would otherwise be tautological. In the same way we imagine that he would have referred to the waiver by the company of any warranty on the part of the assured that the information given in his proposal, to the best of his knowledge and belief, is actually true in substance and in fact if the policy justified him in so doing and his attention had been directed to the point. But if it be otherwise, one can easily understand that, writing somewhat loosely in the language, for example, of a prospectus, he would pass over such a point without a thought, and his statement, if quoted in the more exact context of our scheduled analysis of conditions, might be apt to mislead our readers.

This explanation will, we hope, enable our correspondents to appreciate the position which we have here taken up, and to perceive that no undue fastidiousness has led us to insist somewhat rigorously upon the letter of our suggestions. To our readers generally it may be of interest to know that the following schedule has been compiled on this wise. Appended to the schedules of inquiries which we addressed to the life offices was a request that we might be furnished with a cancelled policy form, from which all the conditions might be gathered to which an ordinary policy effected with the company is subject. The policy forms so supplied to us have been submitted to counsel, and the table given on page 1148 embodies the effect of his opinion as to the construction of the clauses in the policies.

## THE RESULTS OF THE ANALYSIS.

The most obvious result of the analysis is that already indicated above—namely, that the conditions of assurance vary almost endlessly. It seems strange that in a matter so widely practised and so well understood some common standard should not have been reached from which no policy would greatly deviate. But at present it is not so, and it is therefore a matter of some importance that we should indicate for the assistance of our readers the main directions in which these deviations take place. To one of them we have already alluded—namely, the condition that the declarations contained in the proposal shall be true in substance and in fact. A very few additional words will suffice to dispose of that topic.

## WARRANTY OF THE PROPOSAL.

In terms somewhat formidable, this condition is not in effect so serious as might easily be supposed. Speaking broadly it amounts to this—that the company is to have the right to treat the policy as void if it should come to be in a position to prove that any material statement contained in the proposal and made by the assured is, though unintentionally on his part, actually untrue. A life assurance proposal is a document in which a large number of statements have to be made concerning matters as to which most men are but imperfectly informed. Medical men, perhaps, would have less difficulty than others in speaking to the facts of their personal history under a medical point of view; but medical men, in common with their neighbours, are apt to have very hazy notions as to the medical history of even their near relatives. A mere slip on such a point may, according to the terms of this stipulation, be actually fatal to a policy and involve the loss of sum assured and forfeiture of premiums paid. It should, indeed, be added that this formidable power is seldom exercised in any oppressive way by the offices, which in practice scarcely ever stand upon their strict rights unless to protect themselves against fraud, or what they conceive to be fraud. Indeed, the circumstance that some of the more enterprising offices have surrendered the condition altogether is the best possible evidence of the infrequency of its acquiring any importance in actual fact, since it may be taken that no office either would or could forego the benefit of a really valuable stipulation. Still, it is better to trust to the terms of a policy than to the moderation even of the most highly reputable corporation; and hence the enlightened public may be reasonably expected to manifest a distinct preference for the unconditional policy as against the best-conditioned tradition.

## PAYMENT OF THE RENEWAL PREMIUM.

The payment of the renewal premium is necessary, and therefore in every case a condition of the maintenance of the policy. Yet even as to this the rule is not an invariable one. The divergencies, however, only affect the duration of the period of grace allowed for payment of the premium. Sooner or later, if the payment be omitted, the policy must lapse. The prevailing rule is that the premium must be paid within thirty days, or, as the case may be, within one calendar month of the date at which it falls due. But in some instances the continuance of the policy is conditioned upon the punctual payment of the premium when due, and in others the term of grace is extended to twelve or thirteen months, subject to the payment of interest at, perhaps, 5 per cent. or of a nearly equivalent fine. These variations in details that are not exactly unimportant make it necessary to include in our analysis a statement of the conditions on this head incorporated in the policy. For the sake of terseness they are stated in the most liberal terms which the language of the policy will justify. Thus, "conditioned on payment of premium and interest within twelve months" not only means what it says, but, on the principle *Majus in se minus continet*, it imports that about one month's grace is given for the payment of the premium without any penalty, in the ordinary course.

Closely connected with this matter of the payment of the renewal premium is the question of what will befall the assurance if the policy be allowed to lapse. The practically, or actually, universal rule until a very few years ago was that the lapsing of a policy involved its becoming null and void and the forfeiture of all the premiums paid thereunder. In many cases that still is so, but in many others a milder rule has been introduced. This milder rule takes various forms, and embodies in one way or another one or both of two contrasted principles. The one principle is that the assurance shall, if possible, be kept alive, and the other is that the surrender value, if any, shall be held for the benefit of the owner of the policy. We say that these principles are contrasted, and it may be added that they are in a high degree antagonistic. They both have this in common: that they seize upon the surrender value of the lapsed policy, the sum, that is to say, which the company would have been prepared to pay to the assured upon his giving the company a release from liability under the policy, and they make this sum available in one

way or another for the benefit of that policyholder. Upon the one plan the unpaid premium is liquidated from this fund, and so long as it remains sufficient to meet the premiums as they accrue due, so long the policy will remain in force, subject only to the accumulated charge in respect of unpaid premiums so credited as paid. Of course, this plan, though it maintains the assurance for a time, produces its eventual extinguishment, because the charge for premiums credited or, as it were, advanced by the company eats into and eventually absorbs the surrender value. But in the case of a policy of long standing to which a large surrender value attached, this would be a slow process, and in any case a policy could not be forfeited as the result of mere oversight or inadvertence. The alternative plan does not keep the policy intact even for a limited time. On the contrary, the policy lapses at once, but the lapsed policy, though forfeited as an assurance of the sum assured, remains good for the purpose of surrender. As the former plan results in the absorption of the surrender value, so this plan results in the forfeiture of the sum assured. Financially, the one is equivalent to the other, and there is no substantial difference between them. Many proposers will, no doubt, have for various reasons a preference for the one or the other, and will be influenced in their choice of a life office accordingly, but a critic cannot fairly say that the one plan is better than the other; the most that he can say about them is that they differ.

Even their difference, though marked, as the foregoing discussion has shown, does not amount to absolute incompatibility, and many ingenious combinations have been contrived by which the surrender value is first charged with unpaid premiums for such a period of time as practically minimises the risk of loss from mere oversight or a temporary inability to meet the premium when due, and the balance, when that period has expired, is held to the policyholder's credit for a longer or shorter period. In some cases a limit of time is provided in the scheme. It may, perhaps, be that even where no such limit is actually stipulated for it would, in fact, result from the operation of one or another of the Statutes of Limitations. The reader is now in a position to appreciate the references to this matter which occur under the head of "Compensating provisions" in the following schedule.

### SURRENDER VALUE.

The mention of surrender value in this connexion leads naturally to the consideration of the rules under which the companies have bound themselves to deal with the surrender of subsisting policies. The prevailing rule is that this is a matter which must be left to be dealt with on its merits as and when the question arises, and most of the offices therefore will not bind themselves in any way beyond making a statement in a prospectus as to what their practice may be. This, however, is one of the many things which have been improved in recent times, and in not a few cases some clear provision on the subject is incorporated in the policy. Whenever this is so the provision takes the shape of a promise, more or less precise, as to the terms upon which a surrender of the policy will be accepted by the company. But in respect of precision these promises vary very greatly. In their most precise form they prescribe the method according to which the surrender value is to be determined, and so by implication at least ascertain its amount. Less exact, but not less advantageous to the policyholder, are provisions by which a minimum surrender value is fixed, while still lower in the scale come those which entitle him to claim a surrender value, but do not in any way determine its amount. This last will be, by way of distinction from the others, called in the analysis a "guaranteed surrender value." The expression is not quite accurate, but it is easily understood, and has the great merit of being—and of sounding—familiar. The provision respecting surrender value is one of which it is difficult to speak in unexceptionable terms, because it acquires its full importance only in circumstances in which it is difficult to discuss even without running great risk of assigning to them a much exaggerated importance. So long as an insurance company keeps the even tenour of its way, it will matter little, if at all, whether the surrender value be ascertained, guaranteed, or discretionary. A just rule would probably prevail in any case. But recent experience has shown that if the company gets into difficulties the absence of any binding provision respecting this matter may lead to most painful results. Loans made upon policies within their surrender value and secured thereby have been recovered against the borrowers personally, because the surrender value had been in greater or less degree destroyed by the process of liquidation, and thus a class of policyholders by no means the most thriving has been doubly hit—hit, that is, by the loss of an asset and at the same time by the serious aggravation of a liability. A stipulated surrender value would have protected them against this worst misery, by giving them a ground of set-off against the company; and therefore in the circumstances of this unfortunate case the importance of such a provision could hardly be overstated. But happily the case was not more unfortunate than exceptional; and although, if the worst comes to the worst, the ascertained or ascertainable surrender value is all-important, the worst is a contingency so improbable as to be hardly worth consideration. These provisions, like the surrender value of lapsed policies, already discussed, are classed as "compensations," not only because of their analogy to the compensatory provisions already considered, but also because the surrender of a policy is in any case in the nature of an alternative to forfeiture, and intended to compensate the policyholder for the disadvantage at which he places himself by paying under a policy which is liable to be defeated through lapsing an annual sum in excess of that required to satisfy the current year's risk borne by the company.

### LIMITED RESIDENCE AND LEAVE OF TRAVEL.

The class of conditions which we have next to consider comprises those which impose restrictions upon the freedom of residence and travel enjoyed by the assured. With these are commonly associated stipulations which prohibit entering upon naval or military duty; but this is a matter in which any attempt at a summary of provisions would be either so multifarious or so inadequate that we shall not venture upon it. To say that the thirtieth parallels of latitude north and south of the Equator indicate roughly the limits of free travel and residence commonly observed is scarcely an approximation to the fact. But the important point is that many of the offices have seen their way to the removal of this restriction. It will be understood that when in the subjoined schedule no reference is made to any restriction of this kind, the company concedes whole-world leave of travel, subject, that is, to the conditions that the life at risk shall be that of some person well settled in this country, as, for example, that he be a resident here of not less than thirty years of age, and that he entertains at the time of effecting the assurance no then present intention of going abroad. These very reasonable provisoes may be taken for granted in every case.

### JURISDICTION.

The great and well-deserved popularity of the Scottish life offices has caused the very greatest importance to attach to every consideration which affects their relations with English policyholders. Hence it is necessary to allude to the somewhat anomalous condition of things under which these corporations, while doing an extensive business in England, can if they please withdraw themselves from the jurisdiction of the English courts, and compel a plaintiff to bring his action against them at a Scottish tribunal. This, like some of the other points which we have been discussing, is a matter which only very seldom assumes practical importance. The care with which life assurance business is conducted by the great companies has had the effect of reducing litigation under their policies to a minimum, and probably but few if any of the Scottish life assurance offices would avail themselves of such a plea. But a year or two ago the matter was brought into very unpleasant prominence by the successful adoption of this defence in an action where a Scottish office—dealing, if we mistake not, in one of the smaller branches of assurance business—was concerned, and it then became matter of common remark that some of the great life offices stood in the same advantageous legal position with respect to their customers; and, although they doubtless would refrain from making a tyrannous use of the advantage, their moderation would be attributable, not to the strong hand of the law, but to that somewhat vague sense of expediency and propriety which is best expressed by the French saying, "*Noblesse oblige.*" In the sequel of the discussion which then arose many of the Scottish offices rendered themselves amenable to the English courts, either by establishing principal offices on this side of the Tweed—a device which is supposed to make the company theoretically resident in

England—or by introducing into the policy an express acceptance of the jurisdiction of the English courts. The point, though not one of first-class importance, is certainly worth consideration, and accordingly is tabulated below.

### MISCELLANEOUS CONDITIONS.

There are several matters which are not here made the subject of any special observation because they do not serve to distinguish one office from another, but to which, nevertheless, it may be fitting to devote a few words in this connexion. Thus, for example, the condition that proof of age must be adduced at or before the making of a claim is one of universal application, and no difference worth mentioning exists between the various offices in this particular. So with the condition that fraud on the part of the assured in the procuring of a policy will render it void and occasion the forfeiture of premiums which may be paid in respect of it. This is not a question of terms or provisions, for it can hardly be claimed in larger terms than those in which, without any proviso whatever, it is given by mere force of law. So again the clause which is commonly introduced into the policies of those companies which have been incorporated under the old law with unlimited liability, and which has for its object to limit the amount for which a shareholder can be made liable in respect of the company's policies to the unpaid proportion of his shares. This merely assimilates the case of an old corporation to that of a limited company, and it is a clause which is so invariably introduced in these policies to which it has any application that it would not even serve to distinguish the old companies one from another, if this were worth the doing. Other matters of a somewhat different character, to which very much the same comment applies, are such provisions, introduced for the policyholder's benefit, as that lapsed policies may be revived upon proof of health and payment of the premium in arrear with interest or a fine, and that, in the case of policies in which third parties have a pecuniary interest founded upon a valuable consideration, the transgression of the limits of free travel and residence by the life assured, over whom the policyholder may have no control, and of whose movements he may not even be aware, shall not of itself invalidate the policy; but that upon the condition of paying any required extra premium for the regular leave of travel or residence, as the case may be, in insalubrious parts, so soon as the facts come to his knowledge the policyholder shall enjoy uninterrupted protection. These are all matters in which the practice of the offices is substantially uniform, and they are matters therefore which can now be dismissed with this most cursory reference.

### A MODEL POLICY.

Among the policy forms which have been submitted to us is one which is undeniably the least trammelled of them all by restrictions and conditions, and which is therefore, from the policyholder's point of view—the only point of view from which we are able to consider the matter—the best and model form. We give it here at length, that it may serve as a specimen of the policy form which, in the interests of the medical public, we will venture to invite the offices generally to adopt. Its adoption by an office of the very highest standing is proof enough, if proof be needed, that an unconditional policy is a sound form of life assurance contract, and, when once that position is gained, the abandonment of all the multiplied conditions, stipulations, and provisions by which an ordinary policy is still encumbered and imperilled is only a question of time. If the companies could agree upon a common form of words to serve as a standard policy, that would be a very desirable thing, and would simplify the business in such a measure as would certainly not be without a marked influence in the direction of popularising life assurance. If that be too much to expect, it may surely at least be hoped that the example so well set will be speedily and universally followed, and that at no distant date all the offices doing business in the British Isles will be offering policies as simple or as secure in respect of their provision, and as intelligible as the following:—

FORM OF ORDINARY WHOLE-LIFE WITH PROFIT POLICY
(AGE BEING ADMITTED).

No.....

PREMIUM: £.....

SUM ASSURED: £.....

Age at Entry } not exceeding .....Years.

Age admitted.

THIS POLICY WITNESSETH that, in consideration of
of
(hereinafter called the Assured), having paid to the LAW LIFE ASSURANCE SOCIETY the sum of
as the Premium for One Year, terminating on the day of
One thousand eight hundred and
(inclusive), for an Assurance of the sum of upon
the life of the Assured for the whole continuance thereof, IT IS HEREBY AGREED that in case the Assured shall die before or upon that day, or in case the Assured shall survive that day, and there shall be paid to the Society a like Premium before, upon, or within thirty days (hereinafter termed days of grace) after the day of
in the year One thousand eight hundred and
and in every succeeding year during which the Assured shall be living, the property of the Society according to the provisions of its Deed of Settlement shall be liable to make good to the Representatives or Assigns of the Assured at the principal Office of the Society in London, after proof shall have been given to the satisfaction of the Directors of the death of the Assured, the sum of together
with such further sum or sums (if any) as pursuant to the regulations of the Society for the time being shall have been assigned to this Policy by way of Bonus.

AND IT IS HEREBY DECLARED that this Policy is indisputable and unconditional.

PROVIDED ALWAYS that the property of the Society for the time being shall alone be liable to make good all claims and demands upon the Society, and that no Director or other Proprietor of the Society shall by reason of any Policy, or of the whole of the Policies taken together, which any Director may have signed, or may sign, be in anywise individually liable to any claims or demands beyond the amount of the unpaid part of his Share or Shares in the subscribed Capital Stock of ONE MILLION STERLING.

IN WITNESS whereof, We, Three of the Directors of the Society, have hereunto set our hands this day of in the year of our Lord, One thousand eight hundred and

..... } Directors.
..... }
..... }

Exd. Entd.

*PRIVILEGES.*

1. This Policy is absolutely free from all restrictions as to occupation, foreign travel, or residence.

2. This Policy shall not become void if the Premium be paid within the days of grace, even if death occurred in the interval. If the Policy has been in force four years, and is not in security for any debt to the Society, it shall not become void by non-payment of any Premium; but shall, provided the payment of the Premium be made within twelve Calendar months from the stipulated date of payment, with interest at Five per Cent. per annum from that date, remain in force even if death occur in the meantime.

3. A Cash Surrender Value will, if desired, be granted for this Policy after payment of two years' Premiums. The amount of each Surrender Value can always be ascertained without charge at the Office of the Society, but the Society guarantees that it shall not be less than one-third of the total Premiums paid (excluding any extra Premium charged for impaired health or other cause), in addition to the Office value for the time being of any Reversionary Bonus that may have been allotted to the Policy at any preceding division of Profits, and which may for the time being attach to the Policy. Provided that where the Premium has remained unpaid beyond the thirty days of grace and the Policy has under Privilege 2 remained in force, such unpaid Premium shall in ascertaining the Surrender Value be treated as paid, and the same, with interest thereon at Five per Cent. per annum, shall be deducted from the Surrender Value.

4. In lieu of a Cash Surrender Value the holder may, in exchange for this Policy, and after payment of at least four years' Premiums, obtain before the expiration of the thirty days of grace for payment of any due Premium (if the Assured shall not then exceed the age of fifty years, and the age at entry did not exceed forty years) a Non-Profit paid-up Policy for an amount equal to the aggregate of the total Premiums paid (exclusive of any extra Premiums charged for impaired health or other cause), and any Reversionary Bonus allotted to this Policy at any preceding division of Profits which may still attach thereto. The terms on which paid-up Policies will be granted in cases not coming within this privilege can be ascertained on application.

5. The holder of this Policy may at any time during the subsistence hereof obtain from the Society upon Security hereof a loan at Five per Cent. per annum up to at least Ninety per Cent. of the Surrender Value, without any expense beyond the cost of stamping the Memorandum of Deposit and legal charges, if any. Such a loan may be repaid at any time, in whole or in part, without any previous notice to the Society.

6. Should this Policy at any time become void, the Surrender Value, if any, which attached to it immediately before such event happening will be allowed at any time thereafter to the person in whom the right to the Policy was last vested.

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POSTSCRIPT.—It was originally our intention to include some of the minor forms of insurance in this review, and circulars to the principal accident and other insurance companies were issued with that object. For the most part, however, they have produced no appreciable result, and the pressure of life assurance matter makes it quite impossible for us to develop this feature. But while suppressing this material, we may state that we have received from the RAILWAY PASSENGERS' ASSURANCE COMPANY some pertinent observations on the dangers of the healing art, and the special perils to which surgeons are exposed; and from the HEALTH INSURANCE CORPORATION an account of their scheme for providing against the special expenses of a period of ill-health, which to a medical man is apt to be a time of serious stress in a pecuniary sense.

## SCHEDULE OF POLICY CONDITIONS.

| Name of Office. | Policy submitted, conditioned on payment of premium within | Other Conditions. | Compensating Provisions. |
|---|---|---|---|
| ALLIANCE | Thirty days. | Truth of proposal. | Policy maintainable by surrender value. |
| ATLAS | Thirty days. | Truth of proposal. | Fixed minimum surrender value; policy maintainable by surrender value. |
| CHURCH OF ENGLAND | Punctually. | — | — |
| CLERICAL, MEDICAL, AND GENERAL | Thirty days. | — | — |
| EAGLE | Punctually. | Limited residence and travel during three years. | — |
| EDINBURGH (SCOTTISH) | Renewal period. | Truth of proposal. | — |
| EQUITABLE SOCIETY | Punctually. | Truth of proposal; health of assured; performance of covenants. | — |
| EQUITABLE LIFE ASSURANCE SOCIETY OF THE UNITED STATES | Punctually. | Truth of proposal; limited residence during one year. | To be performed within the jurisdiction of English Courts. |
| FRIENDS' PROVIDENT INSTITUTION | One month. | Truth of proposal; limited residence within three years. | Surrender value protected. |
| LAW LIFE | Thirty days or one year (with interest) after five years. | — | Fixed minimum surrender value; surrender value protected. |
| LEGAL AND GENERAL LIFE ASSURANCE SOCIETY | Thirty days. | — | Ascertained surrender value; policy maintainable by surrender value. |
| LIFE ASSOCIATION OF SCOTLAND | Renewal period. | Truth of proposal. | — |
| LONDON AMICABLE | Thirty days. | Truth of proposal; limited residence. | — |
| LONDON LIFE ASSOCIATION | Punctually. | Truth of proposal; limited residence; deed of settlement. | — |
| LONDON ASSURANCE CORPORATION | Thirty days. | Truth of proposal; limited residence. | — |
| LONDON AND LANCASHIRE LIFE ASSURANCE COMPANY | Thirty days. | Truth of proposal. | Surrender value protected for one year. |
| NATIONAL LIFE ASSURANCE SOCIETY | One month. | Truth of proposal; limited residence for three years. | Policy maintainable by surrender value for one year; surrender value protected thereafter. |
| NORTH BRITISH AND MERCANTILE INSURANCE COMPANY | Thirty days. | Truth of proposal. | — |
| NORTHERN ASSURANCE COMPANY | One month. | Truth of proposal; limited residence. | — |
| POSITIVE LIFE ASSURANCE COMPANY | Thirty days. | Truth of proposal; limited residence. | Surrender value protected. |
| PRUDENTIAL ASSURANCE COMPANY | One month. | Truth of proposal; limited residence during five years. | — |
| SCOTTISH EQUITABLE LIFE ASSURANCE SOCIETY (SCOTTISH) | Thirty days. | Truth of proposal; limited residence during five years. | — |
| SCOTTISH IMPERIAL | Thirty days. | Truth of proposal; limited residence during five years. | — |
| SCOTTISH TEMPERANCE (SCOTTISH) | Thirty days. | Truth of proposal; limited residence. | Policy maintainable out of surrender value; English jurisdiction accepted. |
| SCOTTISH UNION AND NATIONAL (SCOTTISH) | One month. | Truth of proposal; limited residence within three years. | — |
| SCOTTISH WIDOWS' FUND (SCOTTISH) | Thirty days. | Truth of proposal; limited residence within five years. | Policy maintainable out of surrender value. |
| STANDARD LIFE ASSURANCE COMPANY | Thirty days or thirteen months (with interest) after five years. | Truth of proposal during two years; limited residence during five years. | Surrender value protected for five years. |
| STAR LIFE ASSURANCE SOCIETY | Thirty days. | Truth of proposal. | — |
| SUN | Thirty days. | Truth of proposal. | Guaranteed surrender value; policy maintainable out of surrender value. |
| UNIVERSITY | Thirty days. | Truth of proposal; limited residence. | Policy maintainable out of surrender value. |
| YORKSHIRE | Thirty days. | Truth of proposal; limited residence during one year. | — |

*List of Offices which either pay no Commission on premiums or offer the benefit of the Commission to a Medical Practitioner effecting a policy without the intervention of a commission-paid agent:—*

ALLIANCE will pay commission.
BRITISH EQUITABLE will pay commission.
CHURCH OF ENGLAND will pay commission.
CLERGY MUTUAL pays no commission.
COMMERCIAL UNION will pay commission to a medical practitioner willing to accept a "private agency."
EAGLE will pay commission.
EQUITABLE SOCIETY pays no commission.
METROPOLITAN pays no commission.
NATIONAL of Ireland will pay commission.
NORWICH UNION will pay commission.
PATRIOTIC will pay commission.
PELICAN will pay commission.
POSITIVE will pay commission.
RELIANCE will pay commission.
UNIVERSITY will pay commission.
YORKSHIRE will pay commission.

IMPERIAL and SCOTTISH EQUITABLE would pay commission to a medical committee or central body.